

2010 Medical Director's Updates to BSPC

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NICK MACCHIONE, FACHE
DIRECTOR

WILMA J. WOOTEN, M.D., M.P.H.
PUBLIC HEALTH OFFICER

County of San Diego

HEALTH AND HUMAN SERVICES AGENCY

PUBLIC HEALTH SERVICES

1700 PACIFIC HIGHWAY, SAN DIEGO, CALIFORNIA 92101-2417
(619) 531-5800 FAX (619) 515-6707

Bruce E. Haynes, M.D.
Medical Director
Division of Emergency Medical Services
6255 Mission Gorge Road
San Diego, CA 92120-3599
(619) 285-6429 FAX:(619) 285-6531

Community Epidemiology
Emergency & Disaster Medical Services
HIV, STD and Hepatitis
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Vital Records

Medical Director's Update for Base Station Physicians' Committee January, 2010

Merle Rupp retiring: Merle Rupp our board secretary responsible for scheduling and maintaining minutes of many of our important meetings is retiring January 28th. We thank him for many years of dedicated service to San Diego EMS and the EMS community. Merle is a critical member of our team who has been important to the system. If you get a chance, give Merle a call and wish him thanks and good luck, or drop him a line.

Influenza: H1N1 influenza cases started dropping in mid-November and continue to diminish to low levels. There have been no influenza-related deaths in the county for several weeks. The percent of deaths with pneumonia and or influenza are at seasonally expected rates. Emergency department Flu-related chief complaints at surveillance hospitals have dropped to 20% of the early November rate, and are at seasonally expected rates. Statewide influenza rates dropped from regional distribution to local distribution. About 4.5% of physician visits cases statewide are for influenza, and if tested, all are H1N1. Resistance testing shows a low presence of the resistance mutation to oseltamivir, at 0.2%.

The average age of H1N1 cases is 27 years, with a range from 1 week to 93 years. Hospitalized cases average age is 33 years, while the age of fatal cases is 45 years. Seventy five percent of fatal cases have underlying conditions.

Since April 820 patients have been hospitalized with H1N1 in the county, and 55 residents died who were infected with the virus. A total of 53 severe pediatric cases are reported, including 4 fatal cases. Statewide 8,437 cases have been hospitalized, 20% to the ICU, with 479 deaths. Deaths under age 18 are 3 times the typical flu season. Pregnant women remain at high risk.

It is estimated that 50% of state residents remain susceptible to infection. For this reason, vaccination is still stressed, especially since the future course of the outbreak cannot be predicted. Adverse events in proximity to vaccination are at expected levels, with 94% non-serious. The rate of Guillain-Barre syndrome is at expected levels, with only a handful having been vaccinated.

H1N1 vaccine is now available throughout the county to everyone who wants it. Orders for 1,280,330 doses of vaccine have been filled and more is coming. About 90,000 vaccinations have been done in regular county clinics. The County of San Diego held 5 vaccination clinics at Points of Dispensing over the last week. A total of 10,800 persons were vaccinated by county staff.

Remember that children under the age of 10 years need a second dose of vaccine, separated by 3-4 weeks. An additional target for vaccination now will be residents of skilled nursing facilities.

Anyone who has not received H1N1 vaccine should contact their medical care provider. Vaccinations are also available at county public health clinics, community clinics and school-located vaccination clinics. Other sources can be found by calling 2-1-1, or on the web at www.sdiz.org/flu.

Besides getting the vaccine, people should wash their hands often with plenty of soap and warm water, cover their coughs and sneezes, and stay home if they are sick. All of these steps help to protect everyone's health and prevent the spread of flu.

King airway: In two major trauma cases the distal portion of the King airway bent on itself and doubled back into the hypopharynx. Ventilation was preserved as the tube bent beyond the ventilation holes. A brief review of insertion will be distributed, but please review the insertion instructions and options.

Pearls: New Pearls are coming out. A brief summary includes careful evaluation for the need for midazolam for behavioral control in agitation; close observation, monitoring and treatment of patients with excited delirium; appreciation that neck wounds occur in superficial tissue, and often will be penetrating injury, not just superficial; reserving IO use for cases where definitive treatment is immediately needed, and careful review of insertion location in cases where anatomy is distorted; caution in what is said on-scene as the patient may be able to hear more than one realizes; and, restricting use of Patient Destination Reports to cases where the patient is clearly stable.

2010 Project: The changes to EMT certification and discipline that will occur under the "2010" project are under development. We'll keep you posted as we work through this project.

CEMSIS: Another project that will begin this summer is the CEMSIS or California EMS Information System. This is a registry of data points to bring consistent data across California, based on the national NEMSIS system. This project has been underway for some time, to make sure it is compatible with our QCS system. The data dictionary should be available soon, followed by training in the system. For questions regarding training or to view the system contact Susan Smith at EMS, and for questions about the data dictionary, contact Barbara Stepanski.

Prasugrel (Effient): This is a new thienopyridine drug similar to Plavix. Initial indications are that it also may result in bleeding after head injury and other conditions. So, prasugrel also should be considered a risk factored in for trauma triage, just as are Plavix and coumadin.

Annex D is under review with a draft that should be available for comment in February, and a goal of finishing an update by June. A similar project will expand the capacity of burn care in the county during disaster operations.

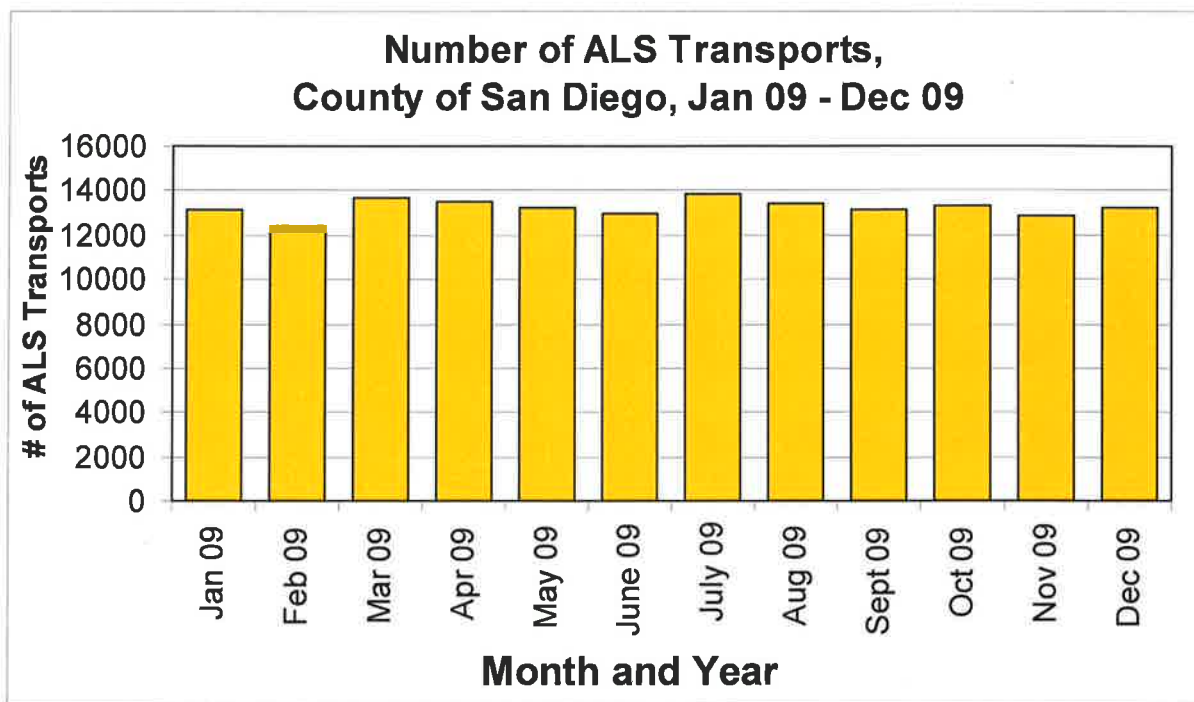
San Diego Psychiatric Hospital: Remember that many patients need a medical screening examination in an emergency department before going to the psychiatric hospital. A careful history must be

performed to eliminate the likelihood the patient has taken an overdose, or has an illness complicating or causing their psychiatric symptoms.

In-service: This summer's in-service will be a limited year after last year's multiple protocol and policy changes. There may changes in shock resuscitation, and several recent articles on fluids and trauma care will be considered.

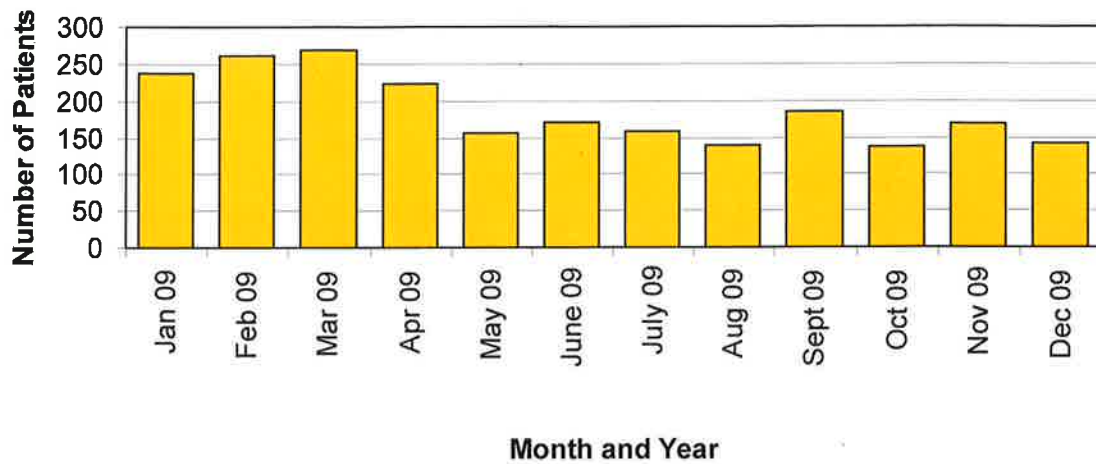
The risk of interruptions in cardiopulmonary resuscitation was emphasized in an article in the November issue of the Annals of Emergency Medicine. Wang et al found "multiple and prolonged CPR interruptions" resulting from ET attempts. This is something that happens easily, so should be carefully avoided. Another article, in the Oct/Dec issue of Prehospital Emergency Care reinforced our use of intranasal naloxone. Clinical response to IN and IV administration was similar, with the mean time of response shorter from IV over IN from time of administration. Time from patient contact to clinical response, however, was the same for IN and IV. More IN patients did need additional doses of naloxone.

Below are the patient destination data in graphic form:



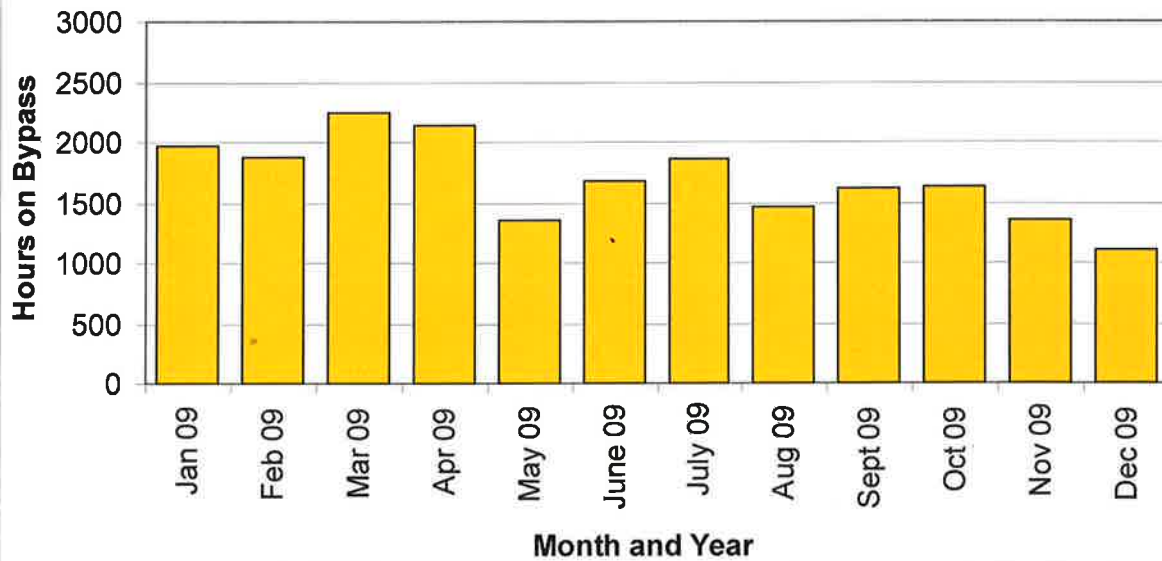
Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Jan 2009 – Dec 2009 Note: Numbers based on Run Outcomes of Transport by Unit and Transport by Other

Number of Patients who Bypassed the Requested Hospital, County of San Diego, Jan 09 - Dec 09

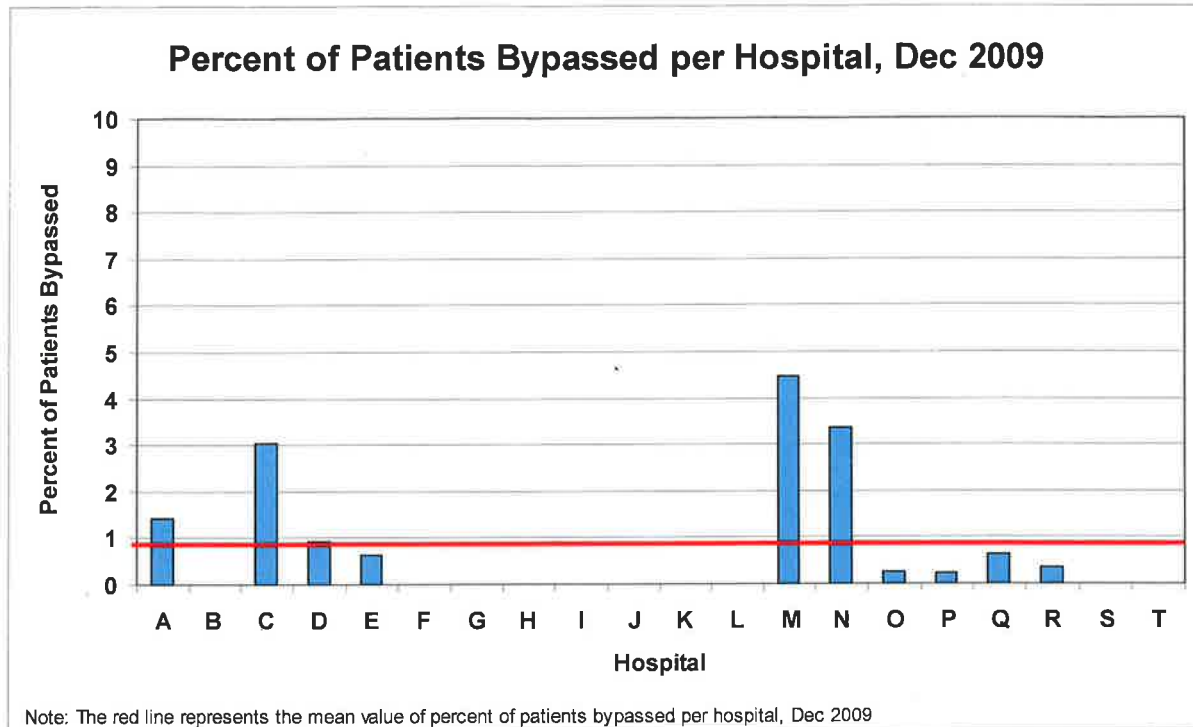


Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Jan 2009 – Dec 2009 Note: Numbers based on Run Outcomes of Transport by Unit and Transport by Other

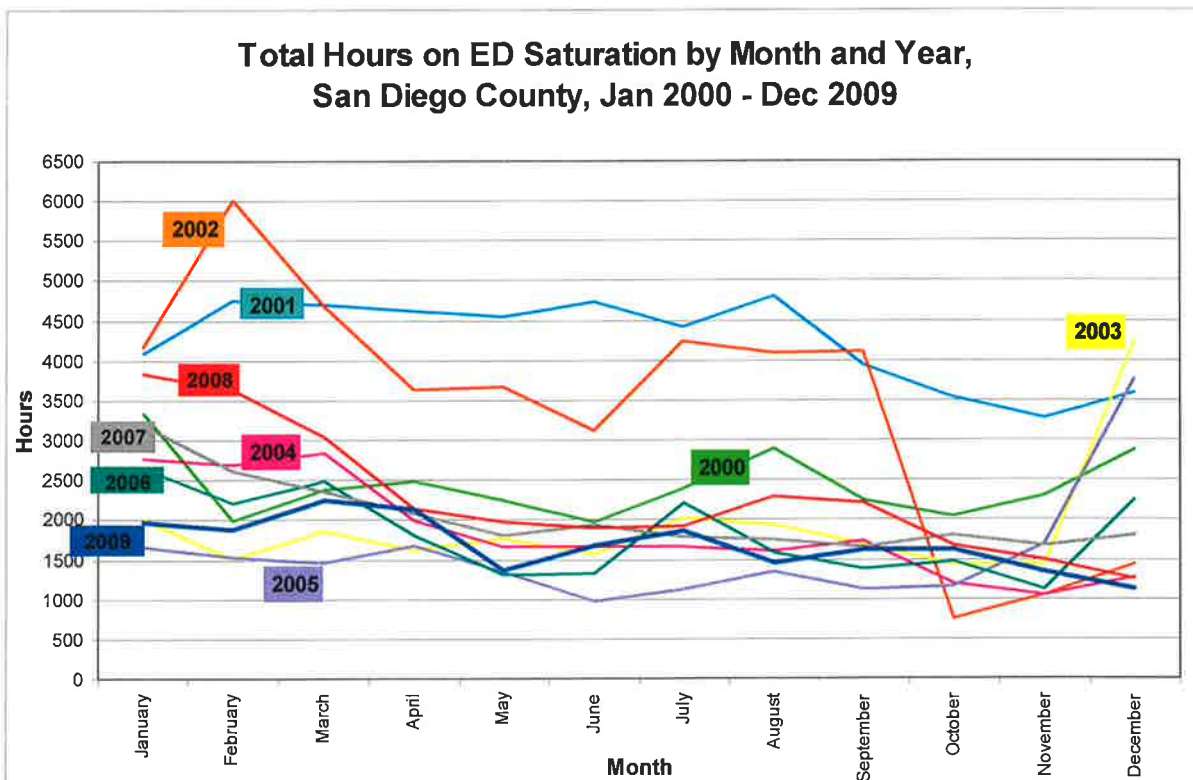
Total Hours on Emergency Department Bypass County of San Diego, Jan 09 - Dec 09



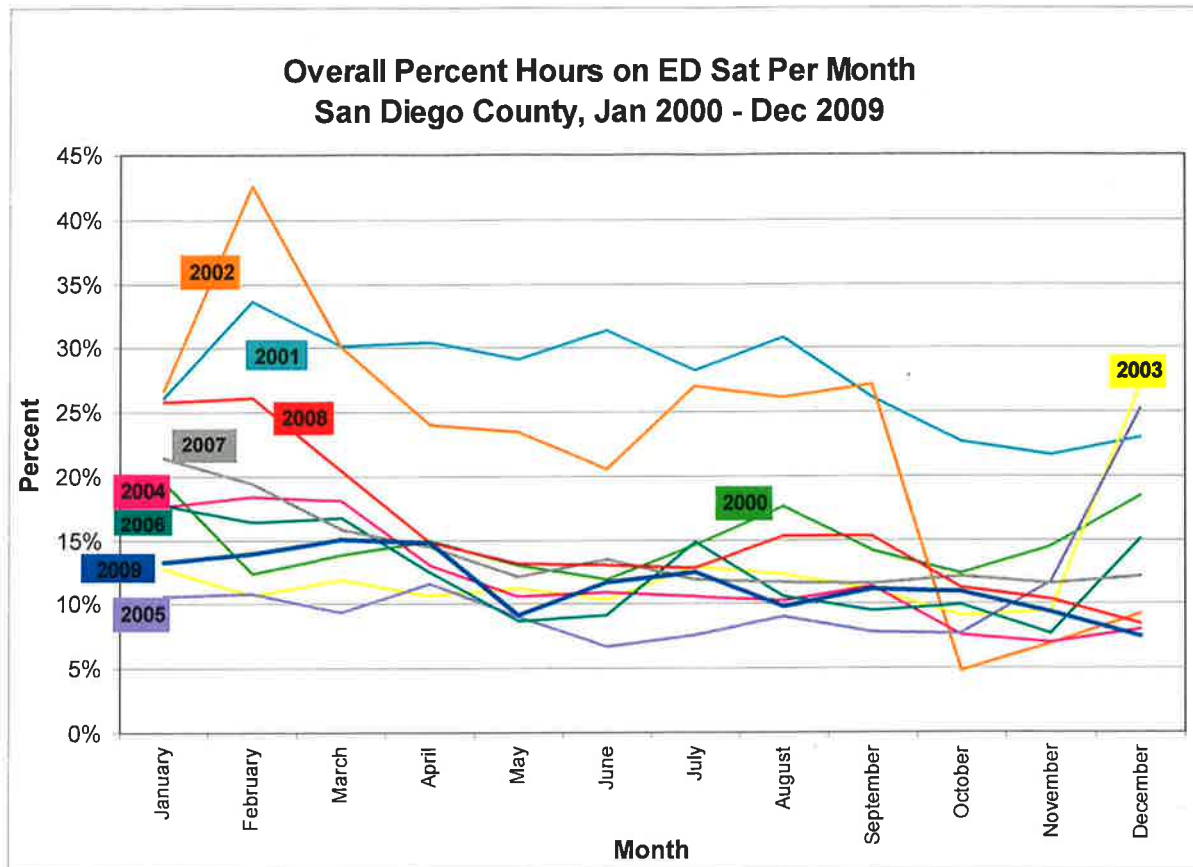
Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Jan 2009 – Dec 2009



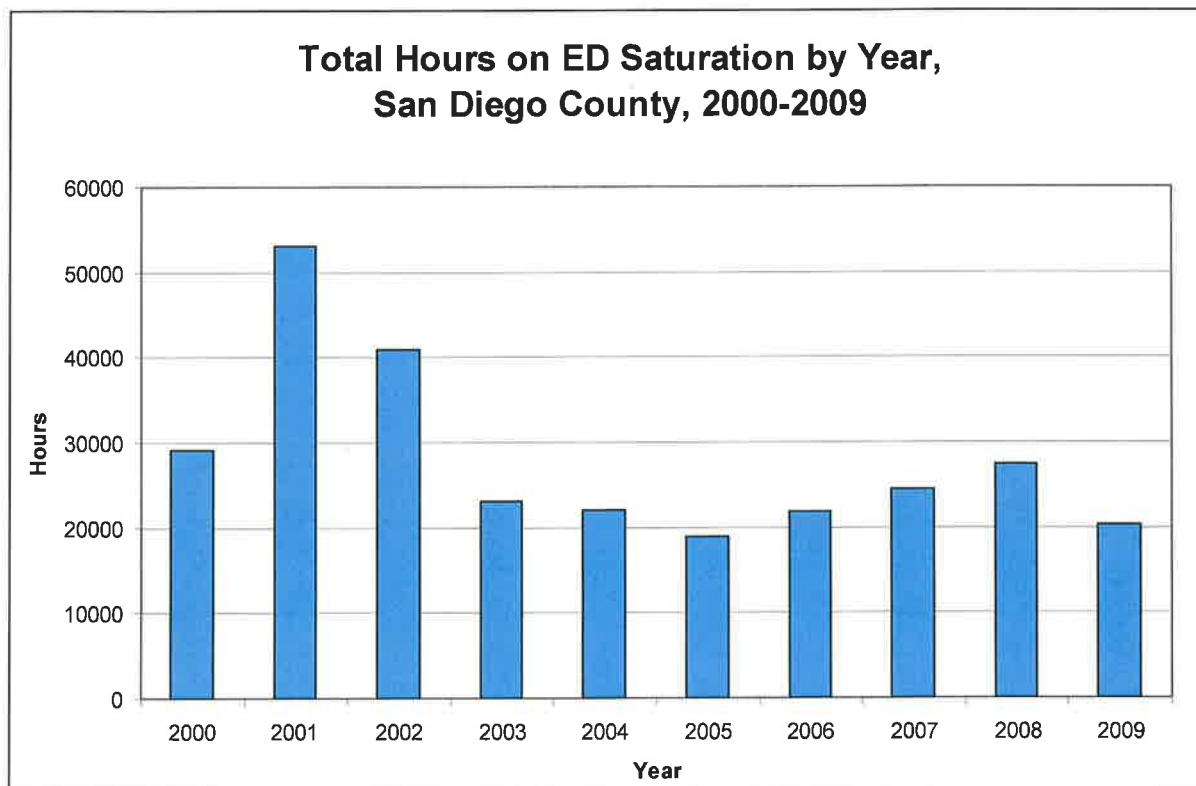
Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Dec 2009 Note: Numbers based on Run Outcomes of Transport by Unit and Transport by Other



Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Jan 2000 – Dec 2009

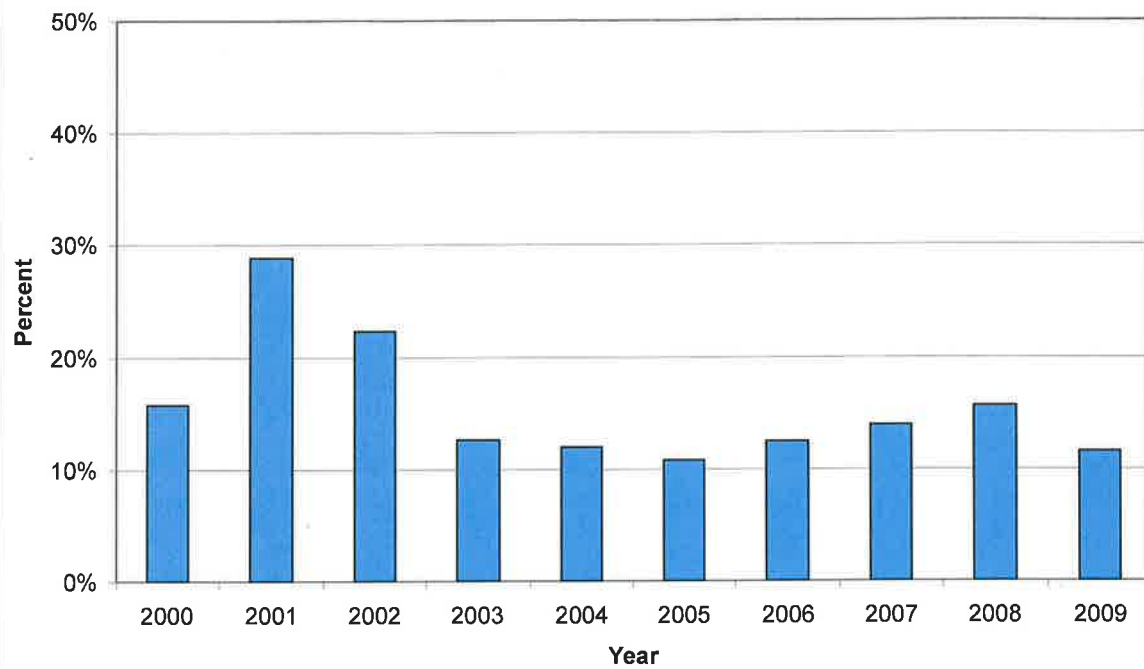


Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Jan 2000 – Dec 2009. Note: 2008 line extended to June due to chart formula, no data for this future date



Source: County of San Diego, Health and Human Services Agency, Emergency Medical Services, MICN Records, 2000 – 2009

Overall Percent Hours on ED Saturation by Year, San Diego County, 2000-2009



Source: County of San Diego, Health and Human Services Agency, Emergency Medical Services, MICN Records, 2000 – 2009



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Medical Director's Update for Base Station Physicians' Committee February, 2010

Influenza: H1N1 influenza continues at a low level. Although there are just over 900 patients admitted with influenza, we luckily have not had a death since December. The number of deaths of San Diego residents remains at 55. About 200 patients were admitted to the ICU. There are occasional upticks in the number of patients seen in the field with flu-related illness, but in general flu-related illness has dropped off in the field. The number of case of flu-related chief complaint visits in EDs continues at a low level, much below November. Experience in California and across the country reflects ours, with disease activity having gone from "widespread" to "sporadic."

Review of the data charts attached show stable numbers of patient transports and bypass. Total hours of ED Sat and overall percent hours on ED sat are both at low levels.

Virtually all tested cases remain H1N1, sensitive to oseltamivir.

The percent of deaths in the county with pneumonia and/or influenza is stable. The average age of hospitalized cases is 33 years, while the age of fatal cases is 45 years. Seventy five percent of patients who died had underlying medical conditions.

Children's Hospital just reported four children with H1N1 influenza who suffered fulminant fatal or near-fatal myocarditis. Myocarditis is seen after viral infections, causing heart failure, arrhythmias, and sometimes cardiogenic shock. Several children required ECMO.

Overall, while the virus is not as virulent as many feared, the number of deaths in the county is still above recent flu seasons. Vaccination is still recommended, especially since the future course of the outbreak cannot be predicted. Adverse events in proximity to vaccination are at low levels, typical of seasonal flu seasons, and the rate of Guillain-Barre syndrome is at expected levels, with no increase among vaccinated persons.

H1N1 vaccine is now available throughout the county to everyone who wants it. Remember that children under the age of 10 years need a second dose of vaccine, separated by 3-4 weeks. Anyone who

has not received H1N1 vaccine should contact their medical care provider. Vaccinations are also available at county public health clinics, community clinics and school-located vaccination clinics. Other sources can be found by calling 2-1-1, or on the web at www.sdiz.org/flu.

Public health will conduct five additional POD vaccination clinics over the next few weeks. EMS personnel who appear at the POD in uniform will be vaccinated without waiting.

The clinics will be February 16, 3-7 pm Corazon Senior Center in Oceanside; February 18, 10 am-2 pm Jocelyn Senior Center Escondido; February 20, 10 am-2 pm South Regional Public Health Center Oxford Street in Chula Vista; February 27, 9 am-1 pm Wells Park Center East El Cajon, and March 5, 3-7 pm Joan Kroc Center. There are also vaccination clinics at several swap meets and farmers' markets, with clinics on February 17 at the Santee Farmers' market, 10445 Mission Gorge Road, 3-7 pm, and February 20 Santee swap meet, 10990 Woodside Avenue, Santee, 8 am to 12 pm.

Besides getting the vaccine, people should wash their hands often with plenty of soap and warm water, cover their coughs and sneezes, and stay home if they are sick. All of these steps help to protect everyone's health and prevent the spread of flu.

King airway: An insertion review was distributed, with the aim of avoiding any bending of the distal tube in the LTS-D. Please review the insertion instructions and options. The instructions should help move the tongue out of the way of insertion if necessary, with emphasis on starting insertion at the side of the mouth and then moving to midline. The tube should not be forced. To obtain best ventilation, the tube should be gently and slowly pulled back proximally after insertion. Use of a laryngoscope, or tongue blades, to hold the tongue out of the way may be helpful.

Pearls: New Pearls are coming out. Please review these when they are issued. Topics will include neonates with congenital heart disease and how neonates manifest distress, dressings for scalp wounds, and a reminder about dentures.

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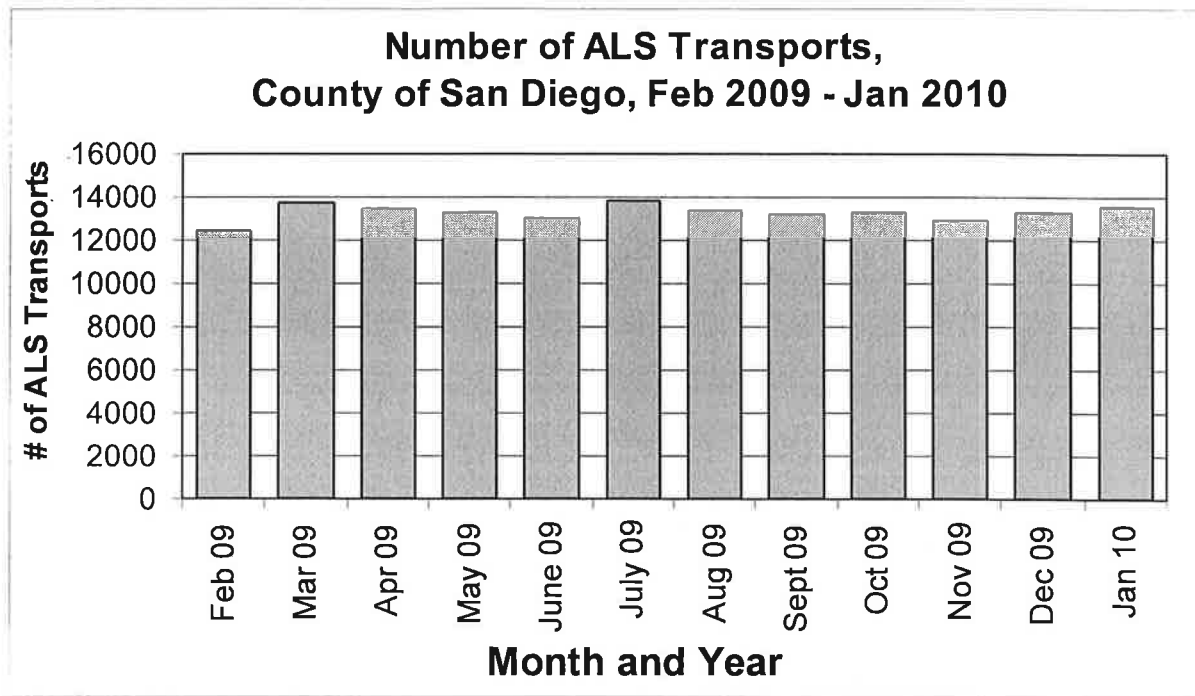
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What's a lucid interval? Many patient care records state there was no "lucid interval" in patients who had a brief episode of unconsciousness from an injury and who are now awake and alert. A lucid interval is a period of consciousness in a patient who suffered a brief loss of consciousness, awakens for a time, and then becomes unconscious again. The lucid interval is the time the patient is conscious. This is typically seen with epidural hematomas.

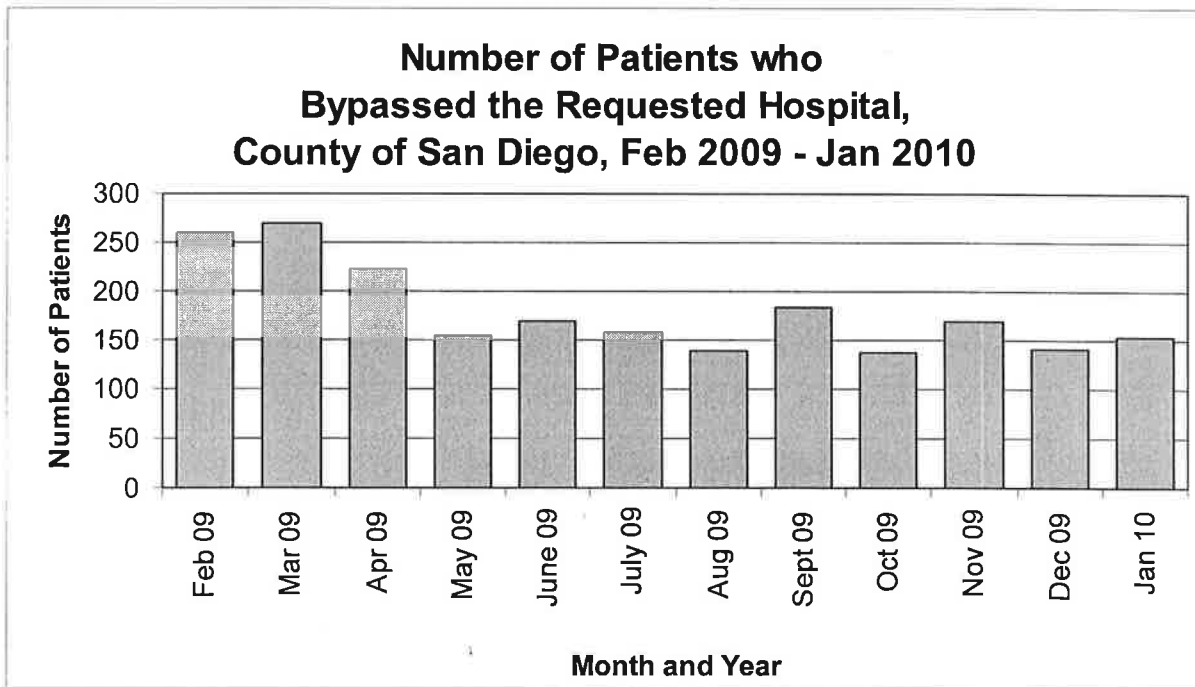
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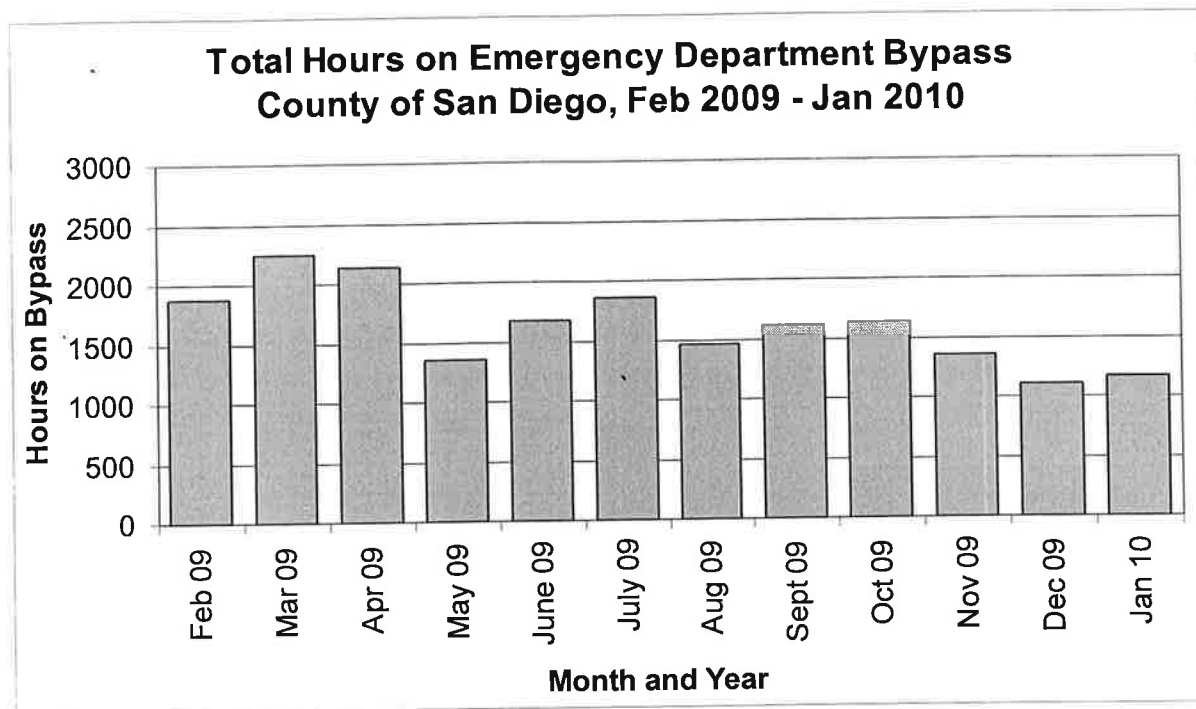
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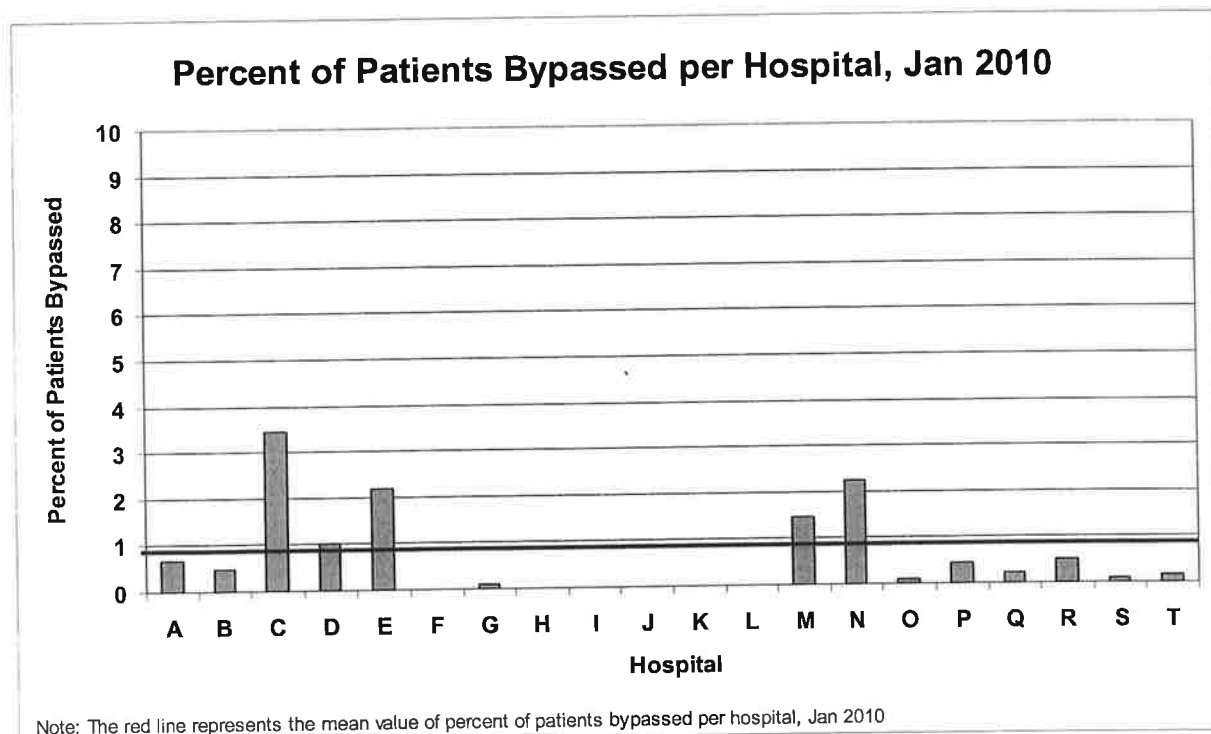
Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Feb 2009 – Jan 2010 Note: Numbers based on Run Outcomes of Transport by Unit and Transport by Other



Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records,

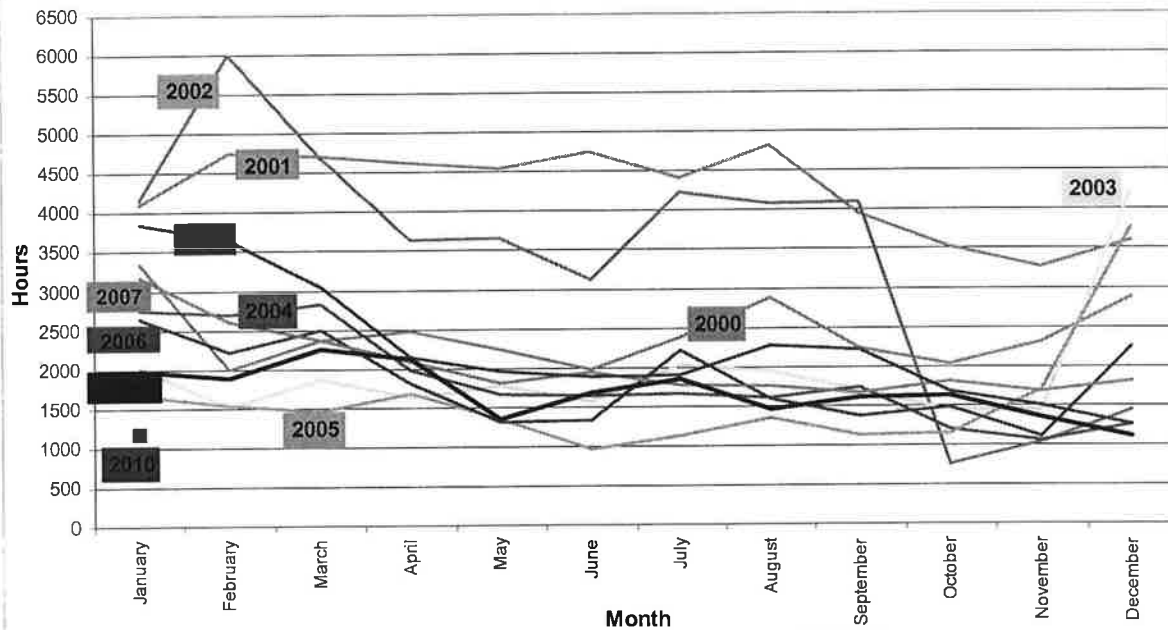


Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Feb 2009 – Jan 2010



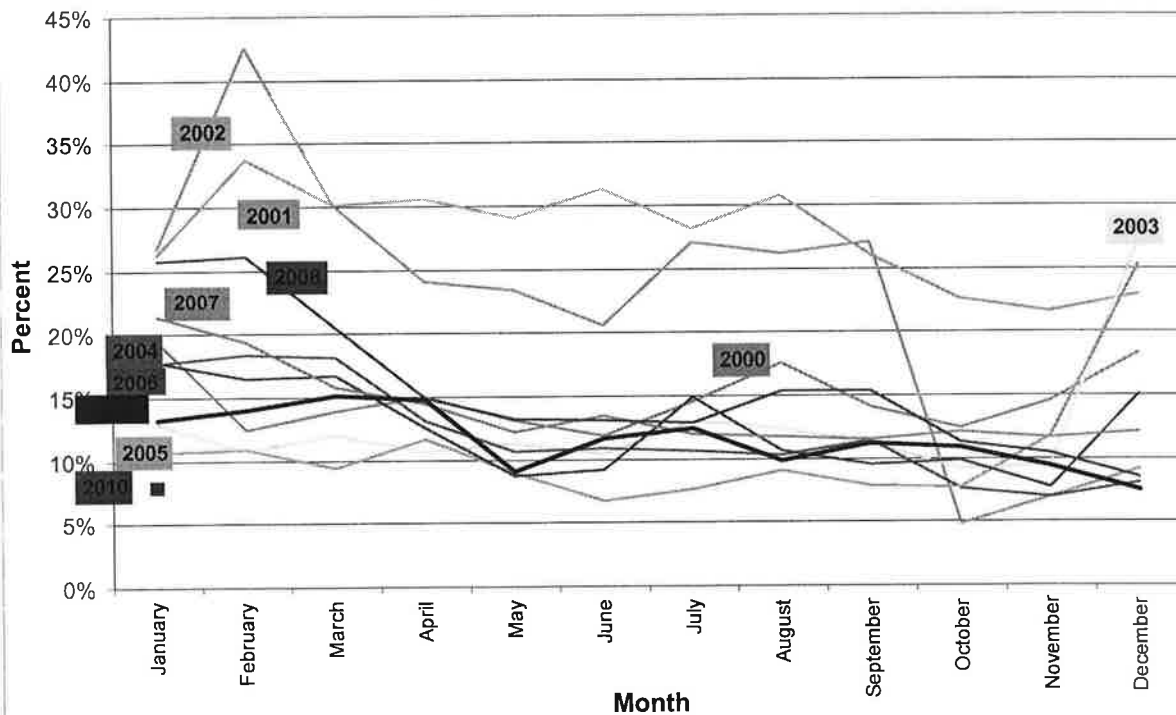
Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Jan 2010 Note: Numbers based on Run Outcomes of Transport by Unit and Transport by Other

Total Hours on ED Saturation by Month and Year, San Diego County, Jan 2000 - Jan 2010



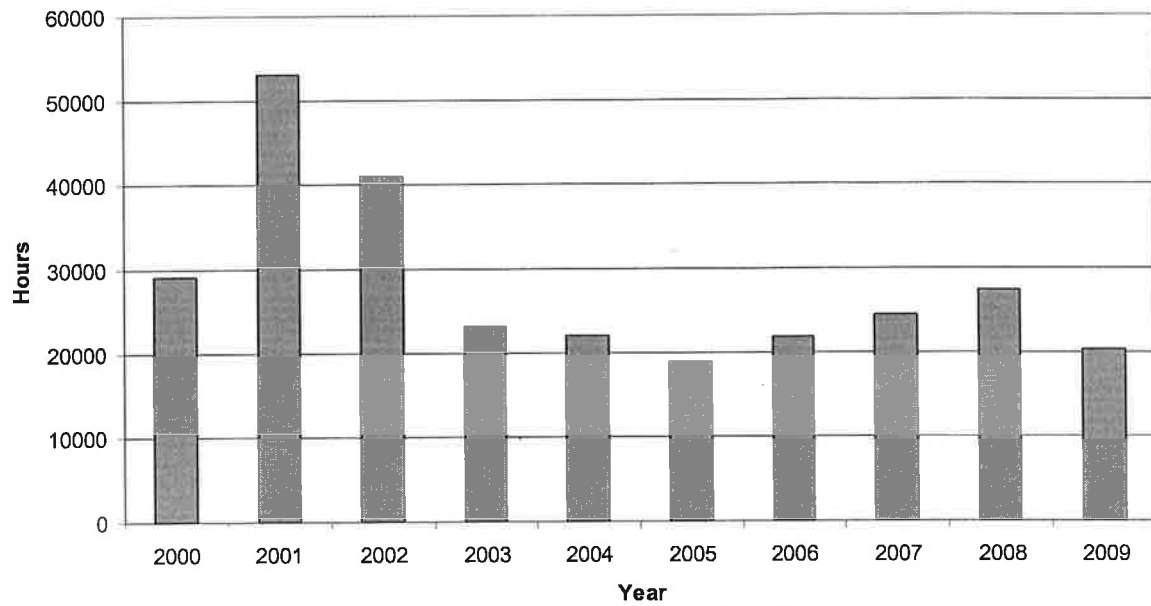
Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Jan 2000 – Jan 2010

Overall Percent Hours on ED Sat Per Month San Diego County, Jan 2000 - Jan 2010



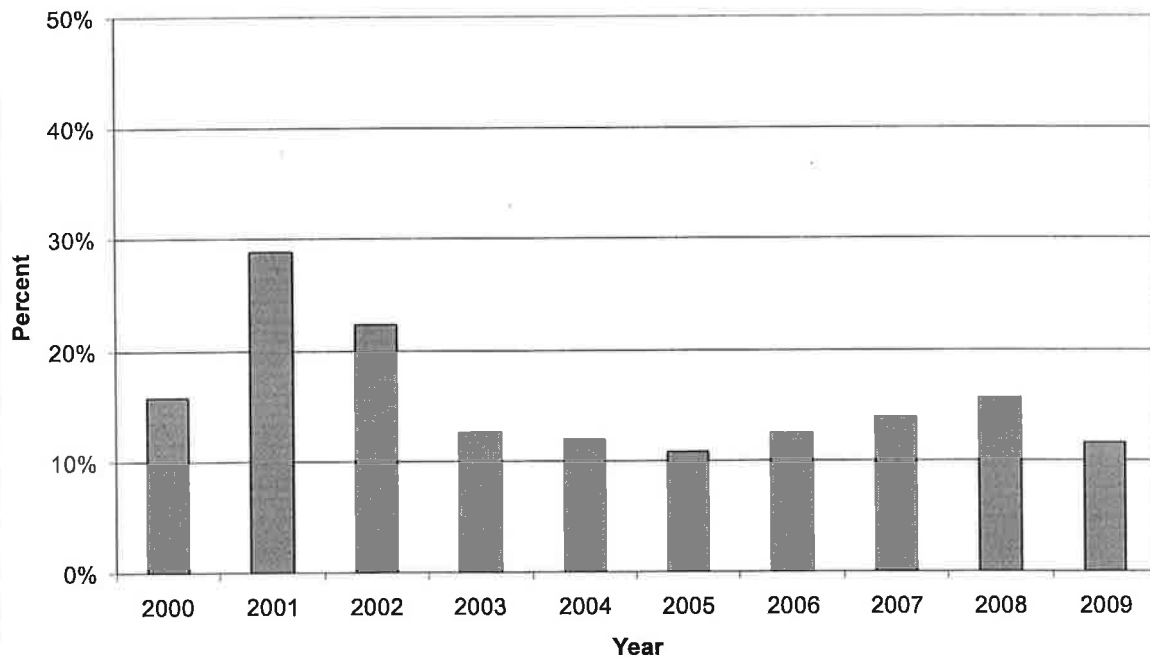
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Medical Director's Update for Base Station Physicians' Committee March, 2010

Rebecca Pate Returns: Rebecca Pate, RN, of our staff has returned from her 8 month deployment. She was stationed at a joint hospital in Kandahar. Our thanks to her for caring for our wounded military. Rebecca will return to work at the end of her deployment period, probably in early May. Please join us at EMS in thanking her and welcoming her safely home.

Influenza: The H1N1 influenza epidemic appears at its end. There is very little disease in the community, now at the end of the traditional flu season. Visits to EDs with influenza like illness are at a low level. Deaths in the county due to influenza like illness are running close to the 3 year average. Again, the peak of influenza was in the latter part of November and we have not had an influenza associated death since December. The state reports some viral illnesses are caused by respiratory syncytial virus (RSV) or human metapneumovirus.

There have been just over 900 patients hospitalized with influenza in the county, 200 to the ICU. Influenza associated deaths remain at 55 county residents. The number with underlying medical conditions is 75%. The average age of flu cases is 27 years, those hospitalized 32 years, and those dying 45 years.

The data charts at the end of the report show ALS transports down some February compared to January. Total hours of ED Sat and overall percent hours on ED sat are both at low levels.

The state ended their situational conference calls. They attribute diminished influenza to the vaccination campaign and the short reproduction time of the virus. I might add the rapid transmission with many persons infected and developing immunity. Nationwide, about 30% of the population has received the H1N1 vaccine, the county's rate is similar. California has had about 11 million vaccinations. The national Advisory Committee on Immunization Practices is recommending that healthy young and middle age adults be added to the groups recommended to receive seasonal vaccine beginning in next fall's flu season.

Adverse events in proximity to vaccination are at low levels, typical of seasonal flu seasons. There has been close observation and monitoring for serious illnesses that occur about the time persons are vaccinated. Guillain-Barre syndrome (GBS) is a particular concern. There have been 74 cases of GBS reported, five of whom received H1N1 vaccination. This is less than the number expected and less than the number of cases seen during a normal flu season.

H1N1 vaccine is still available throughout the county to everyone who wants it. Sources can be found by calling 2-1-1, or on the web at www.sdiz.org/flu.

In-service: This summer's in-service will be the alternate year when protocol changes are limited. We are recommending moving ondansetron and tourniquets to standing orders. Spinal stabilization for penetrating trauma patients will be limited to those with a neurologic deficit, and hypotensive trauma patients should not have IVs started on-scene. The fluid bolus for septic shock is recommended for increase, while lidocaine will be recommended for two AICD shocks either witnessed, or reported by the patient.

Pearls: Scalp wounds bleed profusely and can cause hypovolemic shock or even death. Bleeding can be controlled by pressure along the wound edges. Dressings should not simply be reinforced if they soak through, but taken down to wound and re-done. There should be careful observation for "hidden" bleeding inside a dressing that is too large or from the back of the scalp unseen. Feeding difficulty or changes in neonates may signal serious disease. This could be sepsis, congenital heart disease, respiratory disease or others. Careful assessment using the assessment triangle should be performed. See the January Pearls for an excellent discussion on congenital heart disease by Dr. Madati at Children's Hospital. Watch for dislodged dentures obstructing the airway or making intubation difficult.

Hypoglycemic patients cannot sign out AMA until they have a normal blood glucose level. Most carbon monoxide patients may go to the nearest ED for evaluation and possible referral for hyperbaric therapy. Exceptions where direct transport is better would be unconscious and pregnant patients. Please see the new Pearls for more detail.

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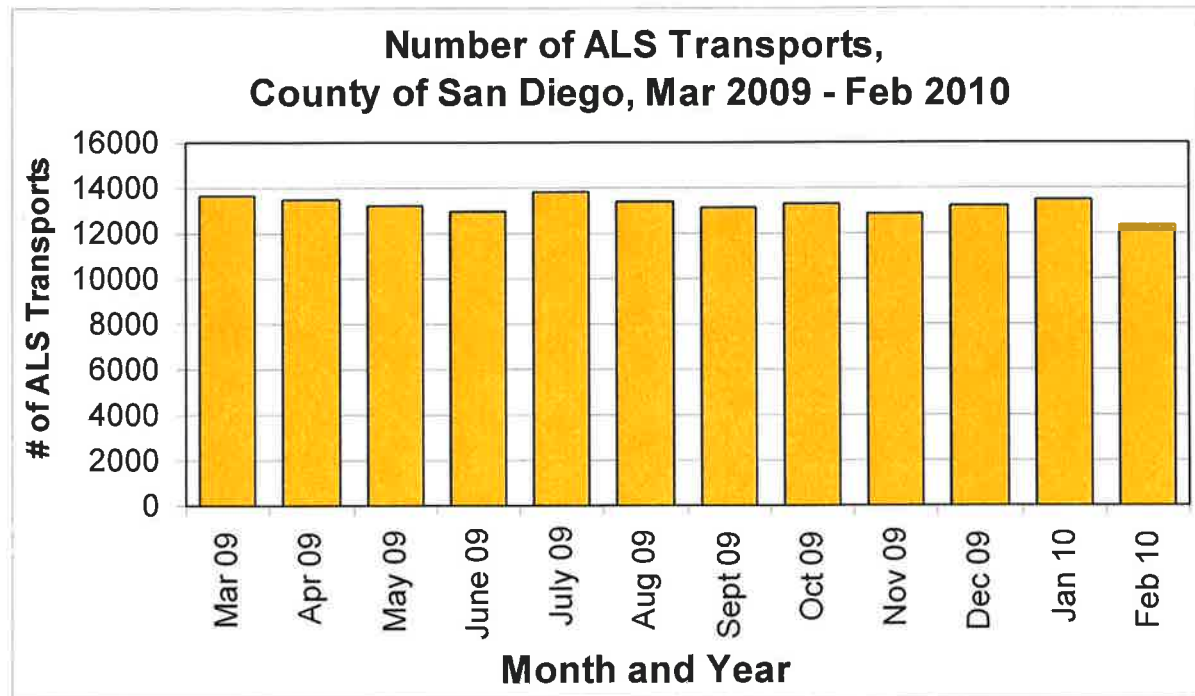
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Congenital Adrenal Hyperplasia: CAH is a rare congenital abnormality where an error in metabolism results in inadequate production of corticosteroids. Children are the usual patient and should have a warning bracelet on, or a family member who is aware of the disease. In school there should be a record. The importance is recognizing it as a potentially life-threatening condition where deterioration may be sudden and precipitated by an illness. IV fluids may help in the field, but most important is to recognize the disease, appreciate its significance, and report it to the base and receiving nurse/physician.

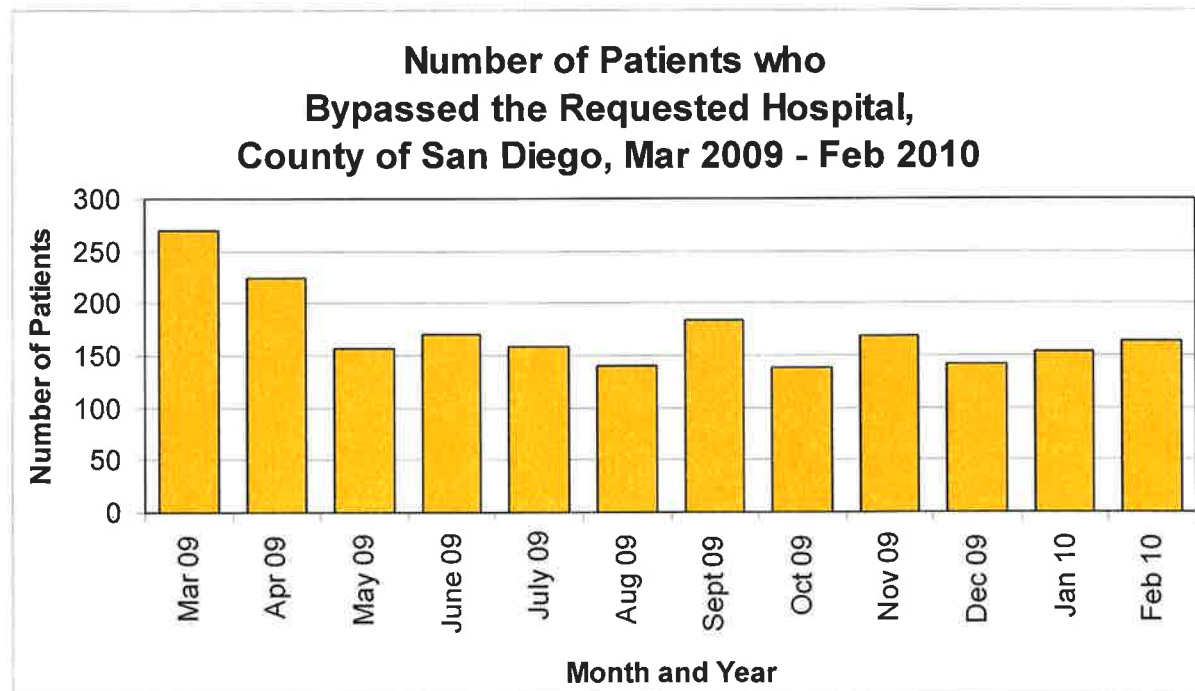
MAO Inhibitors: Nardil (phenelzine) is a monoamine oxidase inhibitor once used commonly in psychiatric care, but now used less often. It is important in that ingesting some foods (eg, cheese, fava

beans) containing the amino acid tyramine may cause life-threatening hypertension. MAOIs also interact with numerous medications. Recognition of the event is critical and blood pressure control may be important.

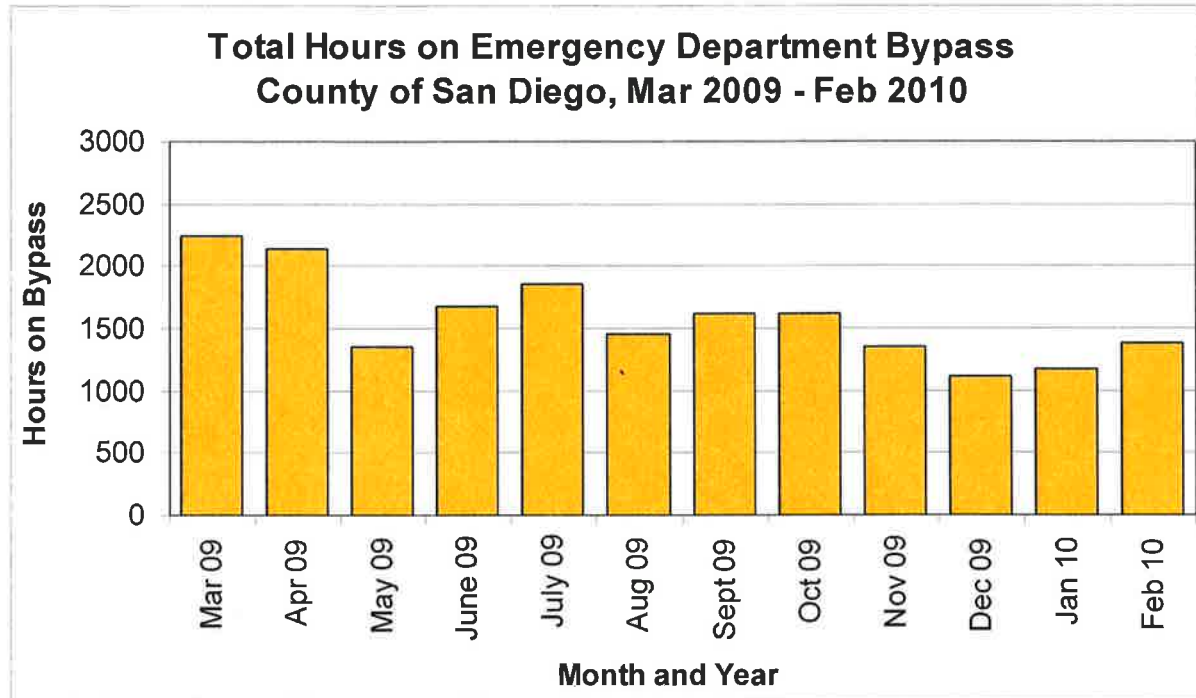
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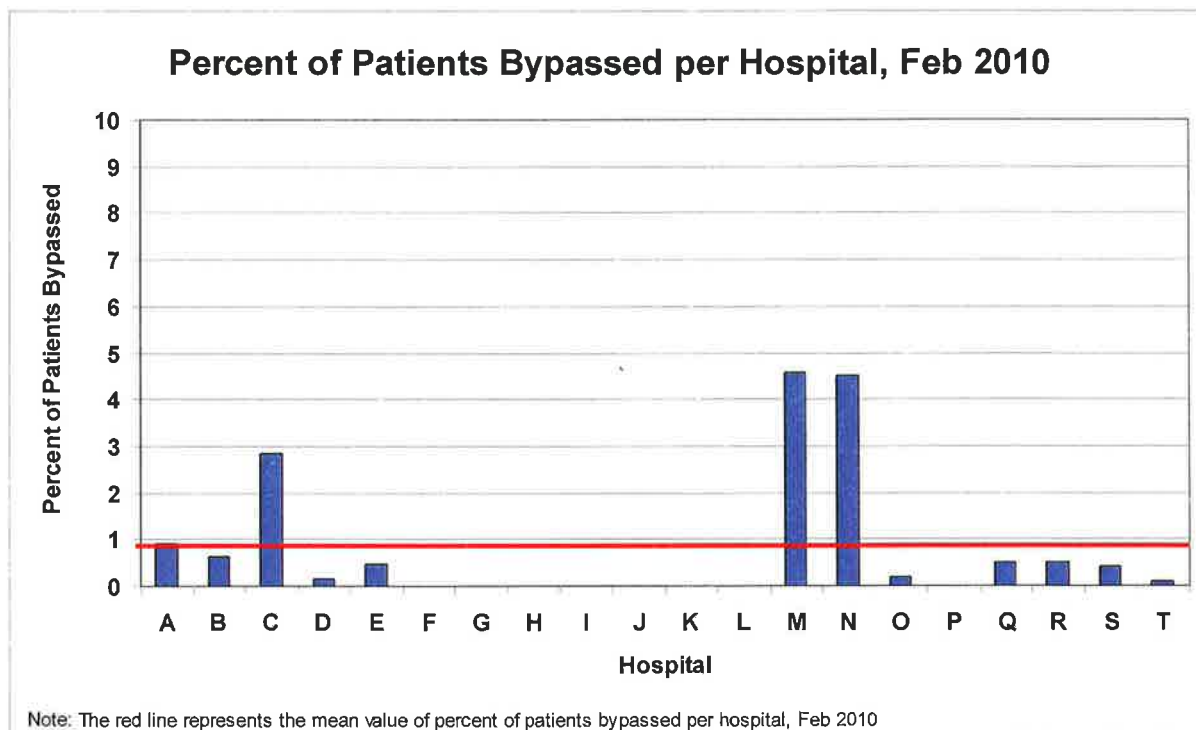
Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Mar 2010 – Feb 2010 Note: Numbers based on Run Outcomes of Transport by Unit and Transport by Other



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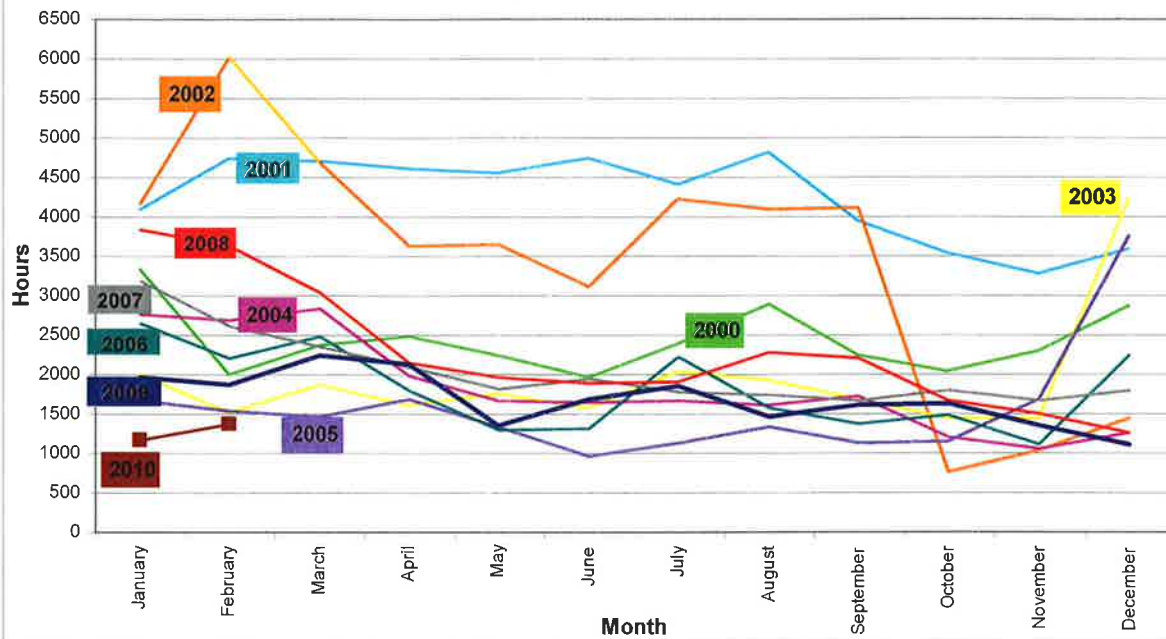


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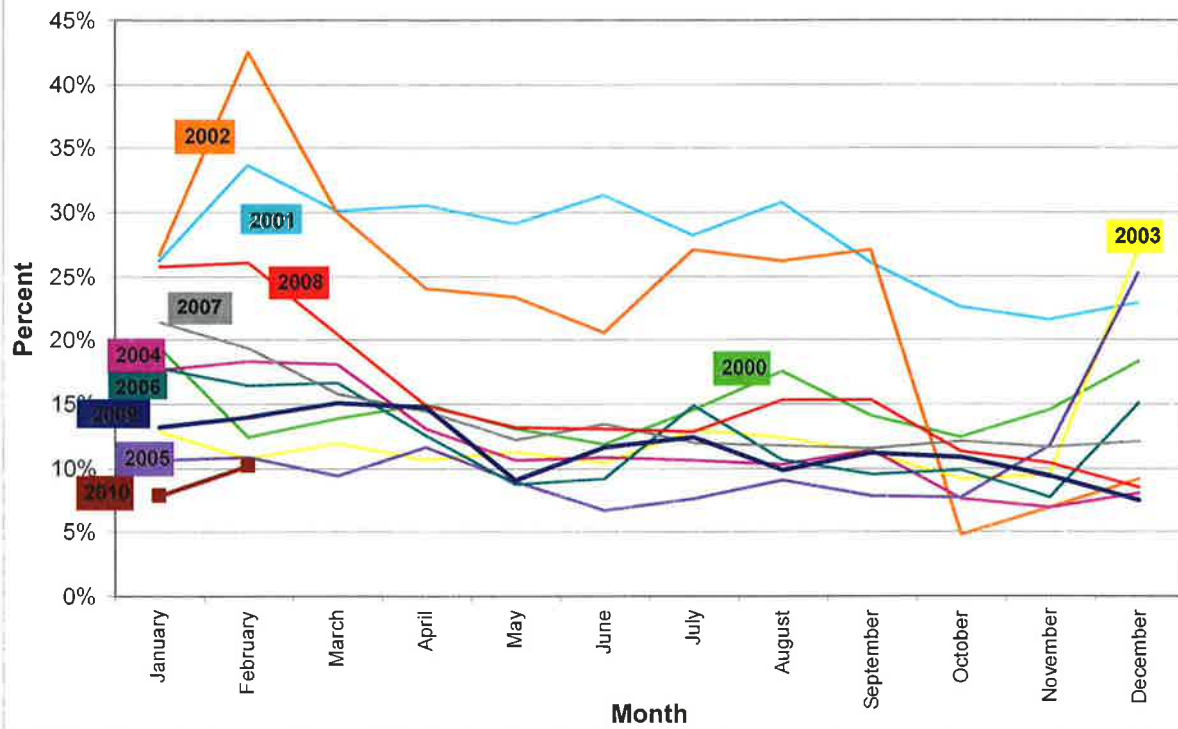
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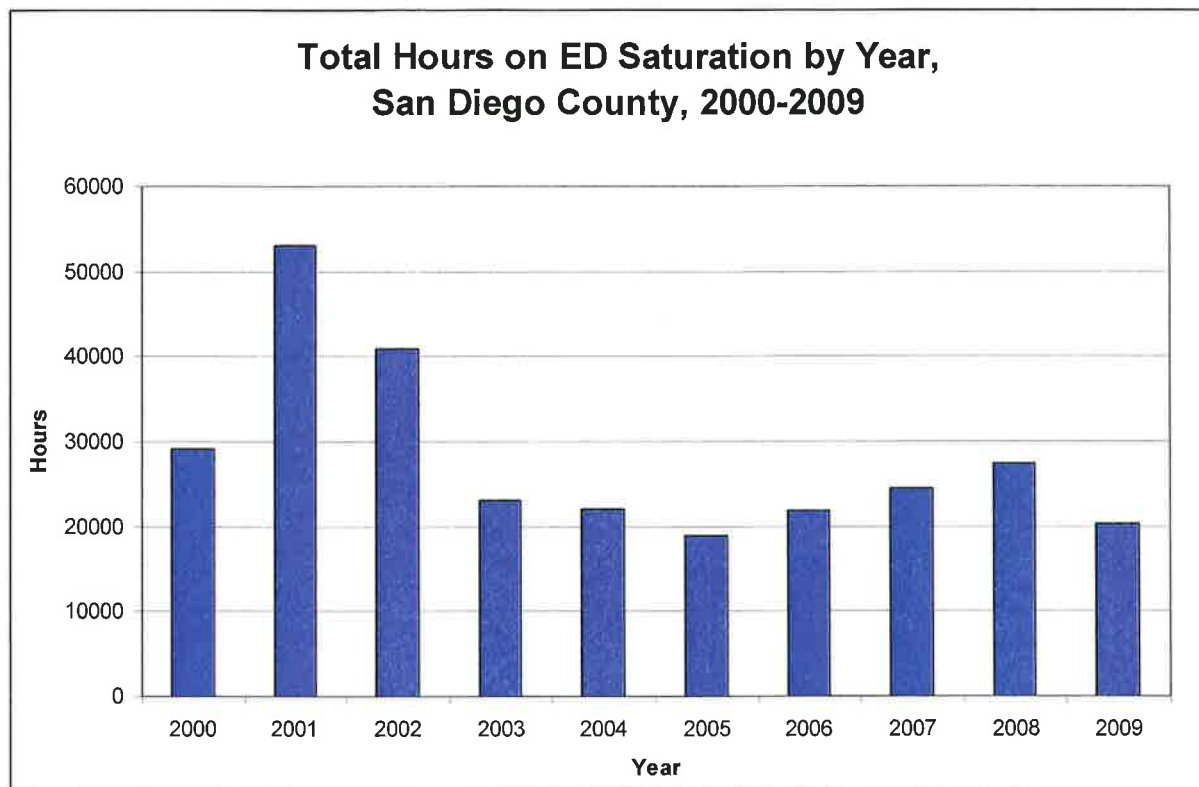


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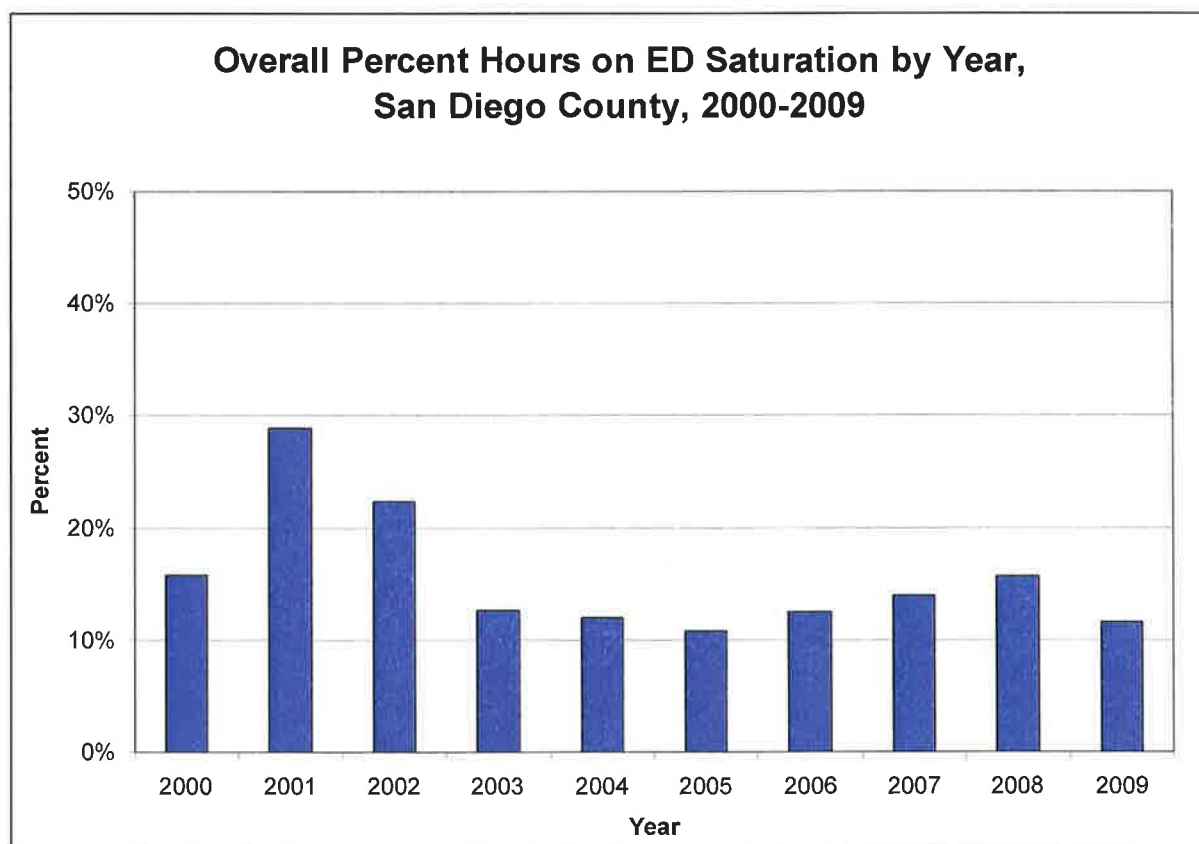
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Vital Records

Medical Director's Update for Base Station Physicians' Committee April, 2010

Earthquake: The 7.2 MI earthquake near Mexicali was easily felt in San Diego. Luckily, the major forces occurred in the desert near Laguna Salada and not in the city of Mexicali or north in the United States. There were several serious injuries in Imperial County, but overall, few injuries given the intensity of the earthquake. Most of the subsequent problems have been related to infrastructure and housing damage. Several shelters remain open while displaced persons are placed in housing. One major water leak is repaired. In Calexico, the most affected city in Imperial County, many parts of downtown are back in operation, while some damaged structures are removed. Aftershocks in the 4.0 to 4.5 range continue.

Calexico Fire Department responded to numerous calls in the days after the earthquake. Calexico decided they could use assistance and a mutual aid request for an ambulance strike team was relayed through the region to San Diego County. An ambulance strike team responded to Calexico consisting of five ALS ambulances and the new Disaster Medical Support Unit with a supply cache of medical and disaster equipment. The team from American Medical Response and San Diego Medical Services spent Monday afternoon through Thursday afternoon responding to calls in Calexico and transporting patients to Imperial County hospitals. It was great help to Calexico and much appreciated.

Our thanks to the entire team, to Travis Kusman for coordination and to the AST team leaders Todd Hombs and Kevin Mercer. Again, thanks for a job well done to everyone who made the trip.

Influenza: H1N1 influenza is reminding us it is still around. A 22-year-old with underlying medical conditions infected with H1N1 died last week. This is the first death associated with H1N1 infection since December. One other H1N1 infection was reported. To this point, 63 persons in the county have died with H1N1 associated infections; 56 were county residents. The average age of death is 44 years, while underlying medical conditions are present in 73%.

Elsewhere in the country, influenza activity is low, but regional influenza activity is reported from Georgia, Alabama and South Carolina. This activity has been noted for several weeks, resulting in

increases in the number of flu-related hospitalizations. The concern remains H1N1 could move to a third wave of widespread transmission. But, for now, activity appears to be limited.

In San Diego 930 patients have been hospitalized with H1N1, 202 in the ICU. The average age of flu cases is 27 years, and those hospitalized 32 years.

The county's percent of emergency department visits for Influenza-like Illness is 3% compared to a previous 3-year average of 2%. Current deaths from pneumonia and/or influenza are running equivalent to the 3-year average of 8%. The number of flu-related chief complaint ED visits continues to drop compared to earlier this year and last year. The current level is stable and low.

Reports on a new study of H1N1 infection in healthcare workers before the start of vaccination indicated ED personnel were at risk of infection. The study reported that half of reported cases involving health care workers occurred in emergency medicine, pediatrics, ambulatory care, and anesthesiology with emergency medicine workers having the highest infection rate.

H1N1 vaccine is still available throughout the county to everyone who wants it. Sources can be found by calling 2-1-1, or on the web at www.sdiz.org/flu.

Bypass Hours: The data charts at the end of the report show ALS transports up in March. Despite that, the number of patients who bypassed a hospital was very low, as was total hours of bypass and hours on bypass by hospital. A number of hospitals are implementing procedures for improved patient flow, and it appears to be paying off. Our thanks to all for their hard work, both the institutions, and the ED and hospital staff making this possible.

Pearls: Please review the March Pearls when you can. Among the Pearls is appreciation that Plavix can cause significant soft tissue bleeding in some cases, in addition to the concern over head injuries. Coumadin and Plavix are not the only anticoagulants that may exacerbate bleeding. Some patients are on home anticoagulation using agents such as Lovenox, a low molecular weight heparin compound which can be injected daily at home. Lists of anticoagulants are available in the San Diego County Paramedic Association/EPIC Medics protocol and medication book.

Attention to high risk wounds continues. Gluteal wounds are high risk. The gluteal area has a rich vascular supply and close proximity to numerous vascular and other structures such as bowel. Wounds in the gluteal area need careful evaluation. Likewise, chest wounds may appear minor but despite that appearance, have resulted in injury to significant underlying structures. These also need careful evaluation and consideration, and careful attention to vital signs that may signal severe injury.

Re-evaluation after procedures is important to pick up any complications. CPAP appears to be beneficial. CPAP, however, requires some cooperation by the patient. If the patient's mental status is too altered to cooperate or follow instructions, they may be at risk to obstruct their airway or have delayed ventilation support with BVM or intubation. Please see the new Pearls for more detail.

2010 Project: The changes to EMT certification and discipline that will occur under the "2010" project continue under development. Several changes will occur. A central registry of EMTs will be created in Sacramento, with new fees to support the registry. The state fee will be \$75.00 for initial certification and \$37.00 for each subsequent renewal. The existing county fee of \$17.00 is separate from the state fee, and the local fee is subject to change based on an evaluation of costs.

Causes for disciplinary action and standards for certification will follow state rules and model disciplinary guidelines. The appeal process will move from the local Investigative Review Panel to the state Administrative Procedures Act. Five chapters of regulations recently were approved at the state level, and local changes to policies will now follow. We'll keep you posted as we work through this project.

CEMSIS: Another project that will begin this summer is the CEMSIS or California EMS Information System. This is a registry of data points to bring consistent data across California, based on the national NEMSIS system. This project has been underway for some time, to make sure it is compatible with our QCS system. The data dictionary is available online at the EMS website. iQCS, the CEMSIS format for our QCS system, is near completion and should be ready for the July 1 implementation date. For questions regarding training or to view the system contact Susan Smith at EMS, and for questions about the data dictionary, contact Barbara Stepanski.

Sildenafil for Pulmonary Hypertension: Sildenafil under the trade name Revatio is now used for pulmonary hypertension. This is a rare condition and should not be seen often, but the same contraindication applies to nitroglycerin use for 24 hours after ingestion of sildenafil when used for this indication as for chest pain or CHF.

Other drugs for pulmonary hypertension are the oral medication bosentan (Tracleer), an endothelin receptor antagonist which has a different mechanism than sildenafil, and the prohibition about nitrate use does not apply. Fewer patients are using the continuous intravenous preparation epoprostenol (Flolan) in which sudden discontinuation can cause rebound pulmonary hypertension and sudden deterioration or death. For Flolan, the important action is re-establishing IV access if access is lost, so the Flolan can be continued.

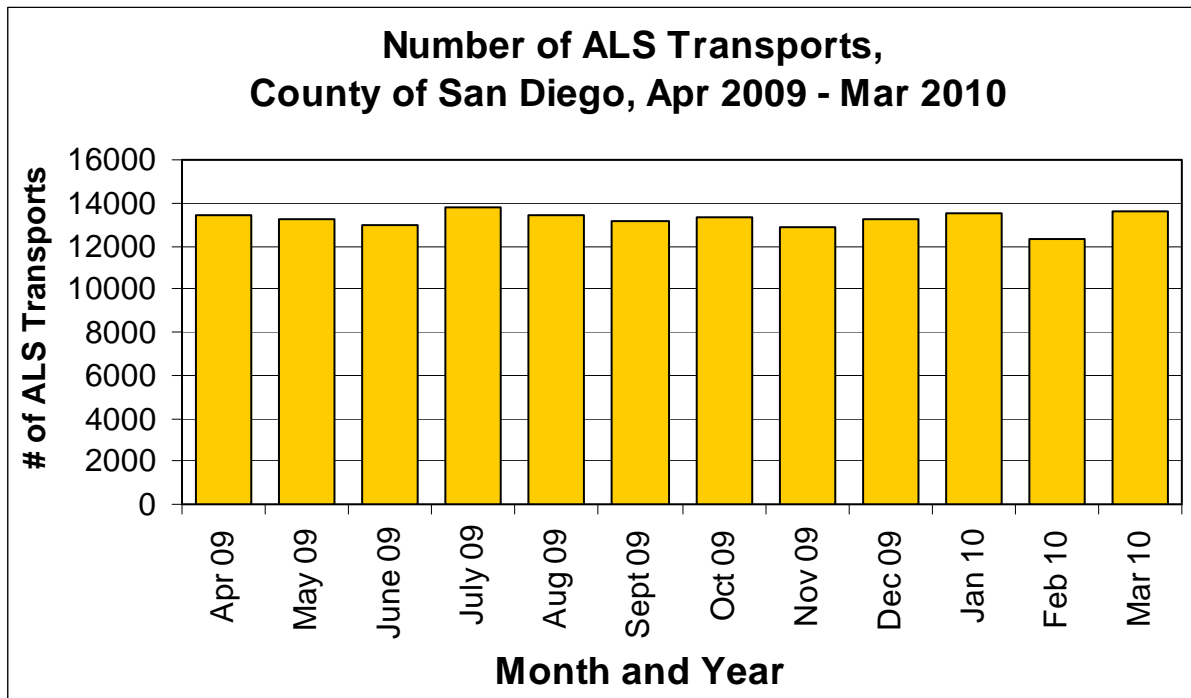
Tourniquets for penetrating trauma: Tourniquets are appropriate for life-threatening hemorrhage from an extremity due to penetrating trauma. In the patient who is dying from extremity blood loss, it should be one of the first interventions performed.

Confusing DNRs: A prehospital DNR was recently presented to a crew altered to say the patient wanted full resuscitative measures. This was not a POLST form that allows such designation, but a state prehospital DNR. This could lead to significant confusion and unintended consequences. It may be a single episode, but make sure DNRs are not altered in an inappropriate manner.

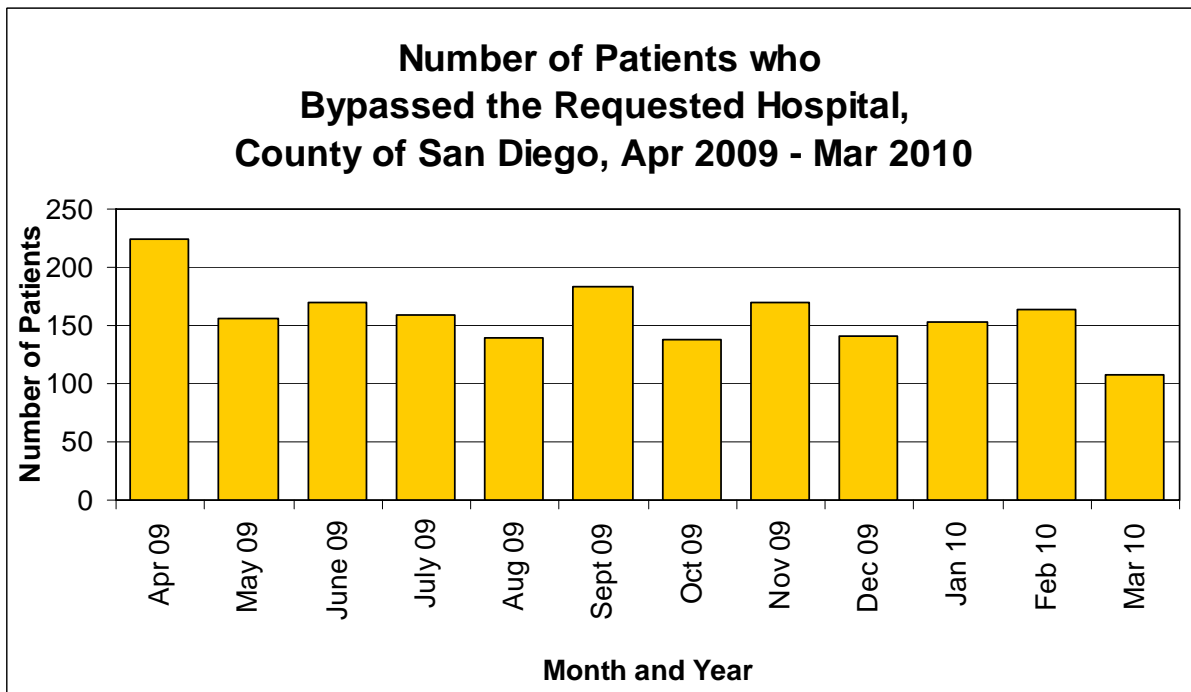
Tip of the Month: Review the March 2010 issue of Reader's Digest, "50 Secrets the ER Staff Won't Tell You."

In-service: This summer's in-service will be the alternate year when protocol changes are limited. We are recommending moving ondansetron and tourniquets to standing orders. Spinal stabilization for penetrating trauma patients will be limited to those with a neurologic deficit, and hypotensive trauma patients should not have IVs started on-scene. The fluid bolus for septic shock is recommended for increase, while lidocaine will be recommended for two AICD shocks either witnessed, or reported by the patient.

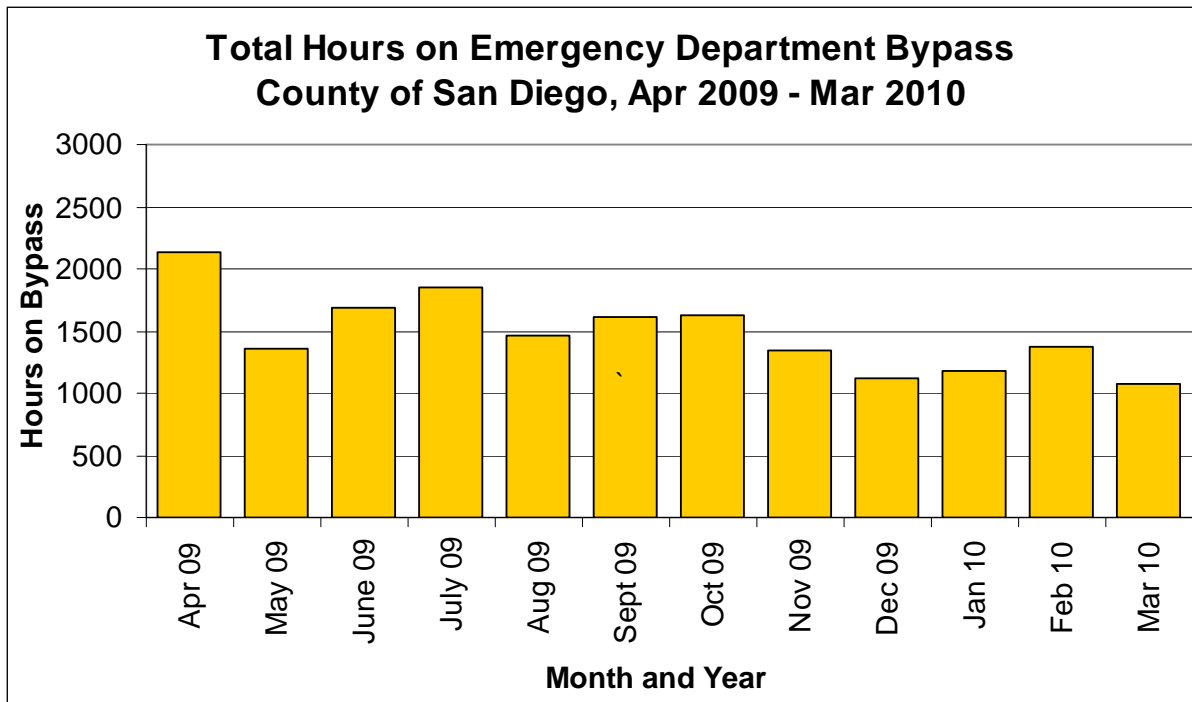
Below are the patient destination data in graphic form:



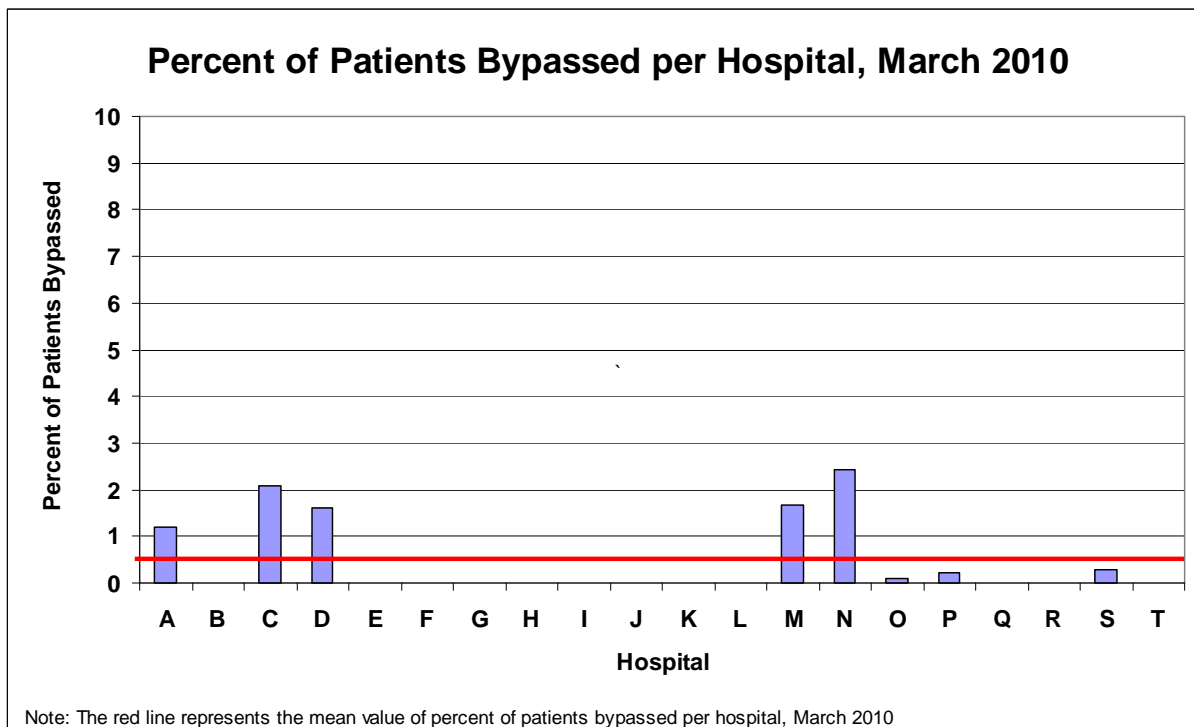
Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Apr 2009 – Mar 2010 Note: Numbers based on Run Outcomes of Transport by Unit and Transport by Other



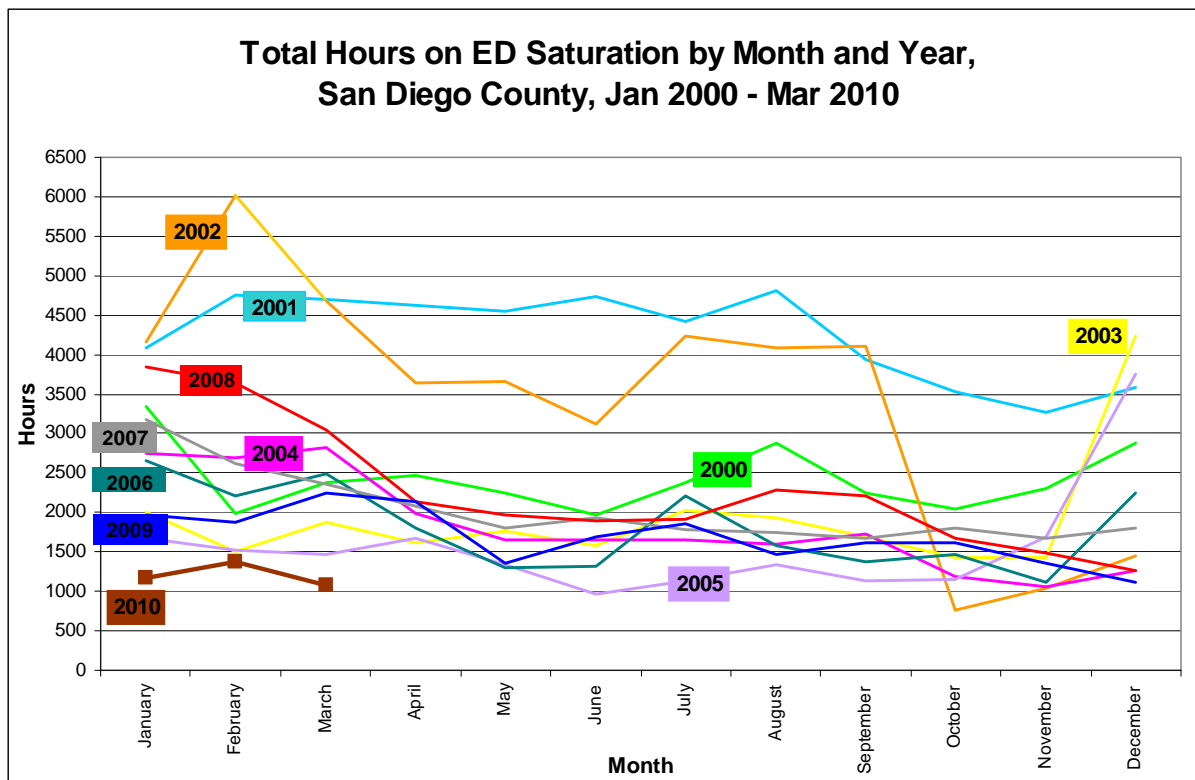
Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Apr 2009 – Mar 2010 Note: Numbers based on Run Outcomes of Transport by Unit and Transport by Other



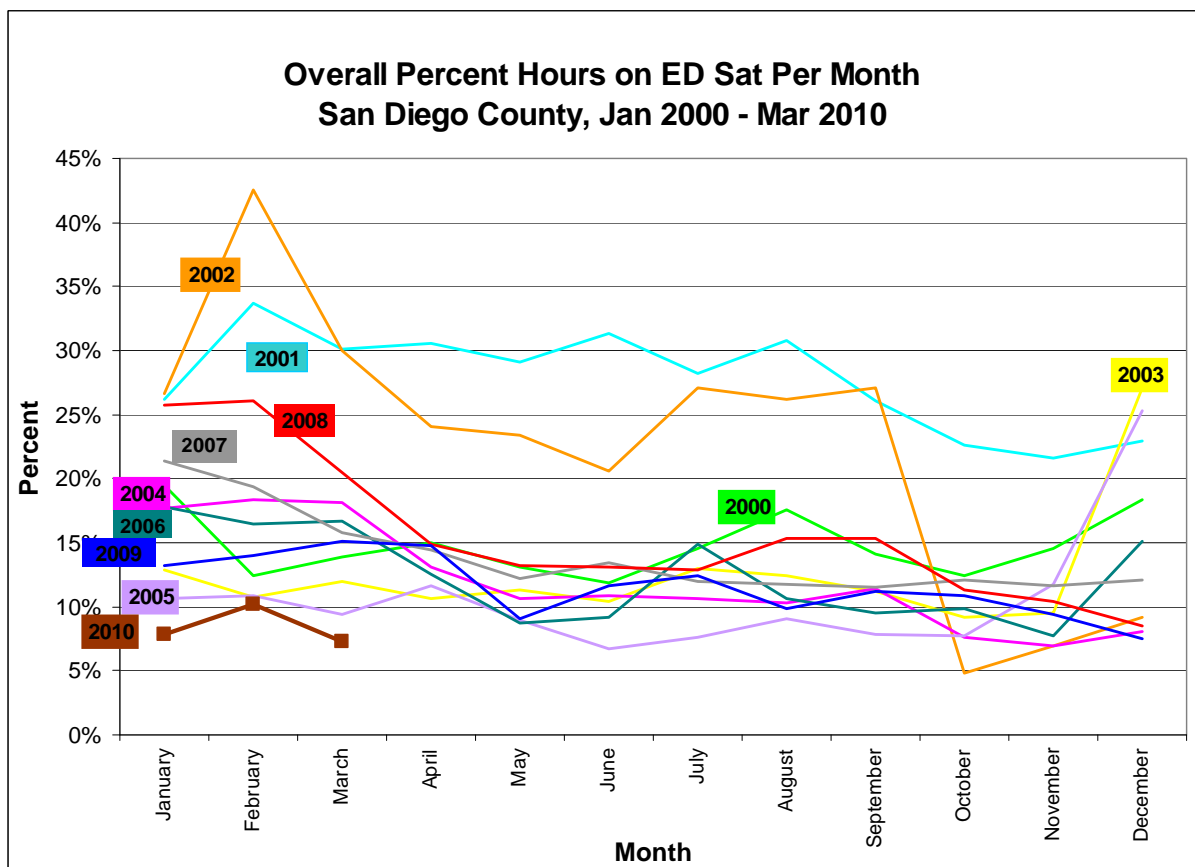
Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Apr 2009 – Mar 2010



Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Mar 2010. Note: Numbers based on Run Outcomes of Transport by Unit and Transport by Other

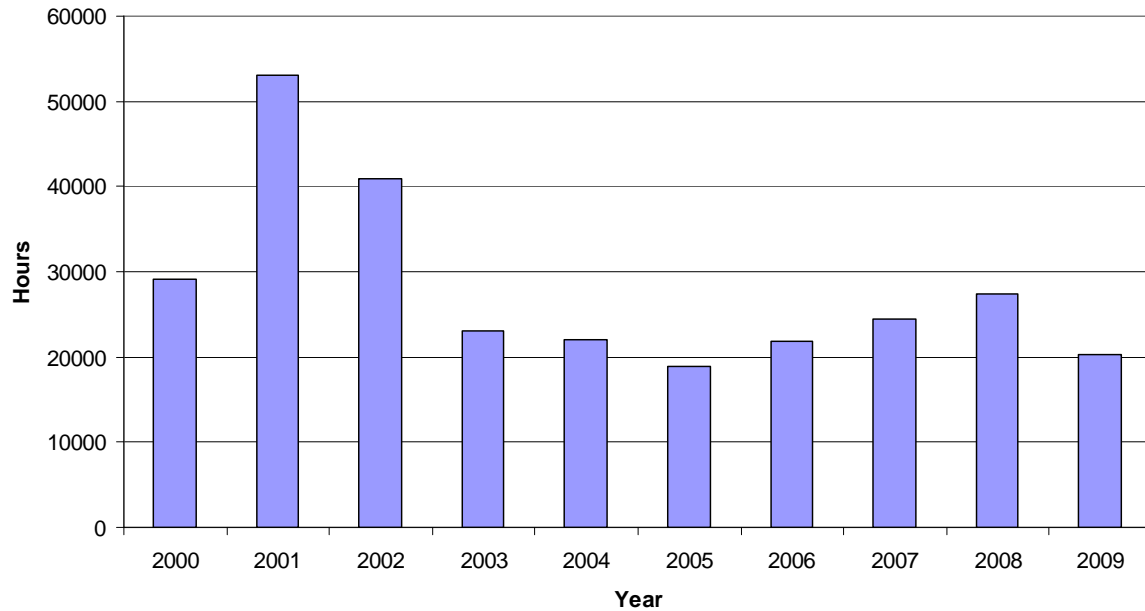


Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Jan 2000 – Mar 2010



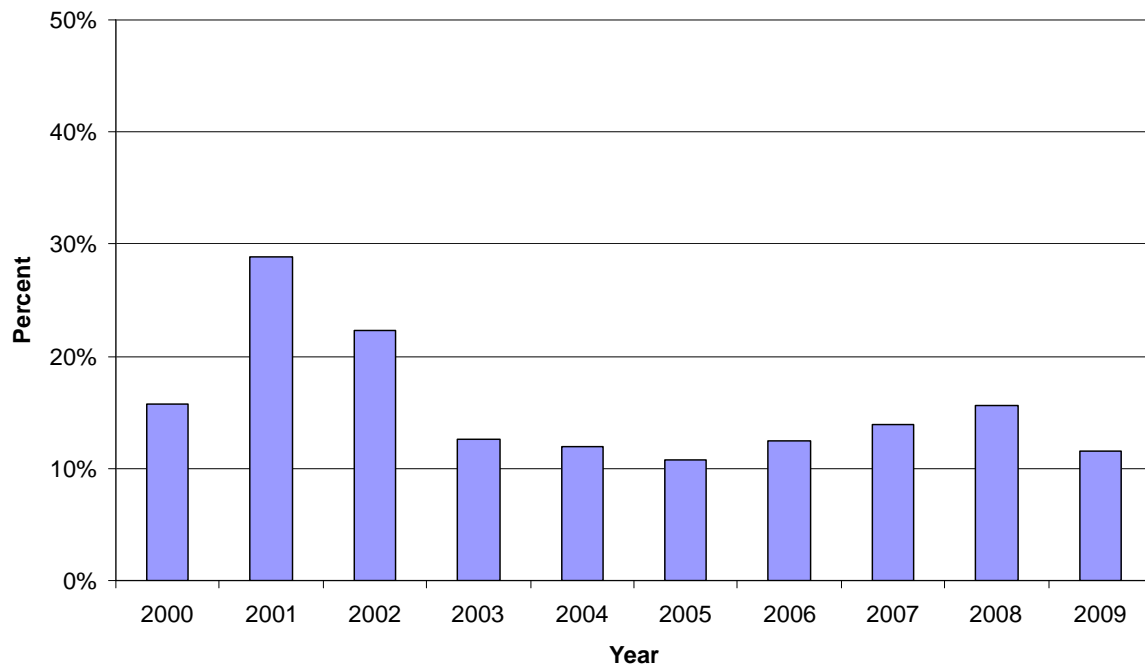
Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Jan 2000 – Mar 2010. Note: 2008 line extended to June due to chart formula, no data for this future date

Total Hours on ED Saturation by Year, San Diego County, 2000-2009



Source: County of San Diego, Health and Human Services Agency, Emergency Medical Services, MICN Records, 2000 – 2009

Overall Percent Hours on ED Saturation by Year, San Diego County, 2000-2009



Source: County of San Diego, Health and Human Services Agency, Emergency Medical Services, MICN Records, 2000 – 2009



NICK MACCHIONE, FACHE
DIRECTOR

WILMA J. WOOTEN, M.D., M.P.H.
PUBLIC HEALTH OFFICER

County of San Diego

HEALTH AND HUMAN SERVICES AGENCY

PUBLIC HEALTH SERVICES

1700 PACIFIC HIGHWAY, SAN DIEGO, CALIFORNIA 92101-2417
(619) 531-5800 FAX (619) 515-6707

Bruce E. Haynes, M.D.
Medical Director
Division of Emergency Medical Services
6255 Mission Gorge Road
San Diego, CA 92120-3599
(619) 285-6429 FAX: (619) 285-6531

Community Epidemiology
Emergency & Disaster Medical Services
HIV, STD and Hepatitis
Immunization
Maternal, Child and Family Health Services
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Medical Director's Update for Base Station Physicians' Committee June, 2010

Drug Shortage: We are seeing shortages of epinephrine 1:10,000 and possibly dextrose 50 mL in prefilled syringes. This is said to be the result of an FDA action regarding manufacturing and the approval of prefills. EMS is currently looking at options, surveying hospitals to see if they can help with supplies if shortages do develop. If that is not possible, we will release instruction for dilution of epinephrine 1 mg of 1:1,000 concentration into the 1:10,000 concentration for intravenous use. If dilution becomes necessary, the correct concentration will be critical, assuring that the concentration is 1 mg in 10 mL, that is, 1:10,000. Other specifics will be addressed in a separate communication.

Bypass Hours: Emergency department hospital bypass remains at low levels. In particular, bypass is dramatically lower in the South Bay. The South Bay hospitals have undertaken re-engineering efforts to improve patient throughput and increase capacity. Congratulations to them for this major effort!

The graphs below show that in May the number of transports rose slightly, but generally consistently for a number of months. Bypass remains lower than previously, especially in the South Bay.

Influenza: Now that we are out of flu season, H1N1 influenza is present only at very low levels in the community. H1N1 remains almost the only type of influenza seen. While there are only sporadic cases, occasional serious illnesses occur and there has been one death since December. The H1N1 strain will be in this year's flu vaccine.

H1N1 vaccine is now available throughout the county to everyone who wants it. Remember that children under the age of 10 years need a second dose of vaccine, separated by 3-4 weeks. Anyone who has not received H1N1 vaccine should contact their medical care provider. Vaccinations are also available at county public health clinics, community clinics and school-located vaccination clinics. Other sources can be found by calling 2-1-1, or on the web at www.sdiz.org/flu.

In-service changes: Ondansetron and tourniquets will be moved to standing orders (SO), tourniquets now SO for individual patients compared to SO before in multiple patient incidents only. While most patients should have dressings and direct pressure applied first, some patients with severe injuries and

life threatening hemorrhage manifested by low blood pressure should have the tourniquet applied immediately. Rapid transport, notification of the base and leaving the tourniquet visibly exposed remain important.

Spinal stabilization for patients with penetrating injuries is no longer recommended in the treatment guidelines beginning July 1st. It has been known for many years, at least since Vietnam, that spinal stabilization in penetrating trauma may not be necessary. The current military version of PHTLS supports that. We are making the change at this point due to previous evidence, and two recent articles in the Journal of Trauma, one in October 2009 and the other in January 2010.

The October article reviewed experience with gunshot wounds at a New York trauma center (357 patients), along with examination of the National Trauma Databank including more than 75,000 gunshot wound cases. There were rare (0.03%) patients with spine fractures without spinal cord injury (paralysis etc) who required surgical stabilization of the spine. There was no evidence spinal stabilization prevented injury. This group of patients required a great deal of emergent care that might be delayed by spinal stabilization, including emergent intubation in 39-41%, and emergency surgical interventions in 43-55% of patients. Patients with additional blunt trauma mechanism or head and neck wounds were excluded.

The January article included 45,000 penetrating trauma patients from the National Trauma Databank, comparing those who received spinal stabilization to those who did not. Spine immobilized patients were more likely to die than those without stabilization. Only 0.01% of patients had an incomplete spinal injury that required surgical stabilization. Hypotensive gunshot wound patients were particularly likely to die if immobilized.

There could be several reasons for these results. Additional time in the field may be one factor. Immobilization may complicate airway management, or hide critical wounds leading to a delay in diagnosis.

Patients with penetrating trauma who have a neurologic deficit (paralysis, weakness, sensory deficit, priapism etc) upon evaluation should be immobilized, as should those who have suffered blunt trauma in addition to the penetrating injury. Patients with altered mental status with a possibility of blunt trauma may be immobilized. Some penetrating injury patients will have altered mental status due to profound shock, which should be considered as well.

Another protocol change for trauma will be delay of inserting IVs in critical, hypotensive trauma patients until en-route. While fluids may help maintain perfusion in those who are profoundly hypotensive, they also replace oxygen carrying blood with non blood fluid, may dislodge clots by unnecessarily increasing pressure, and dilute clotting factors in the blood. There is little evidence fluids will improve survival.

Fluid boluses for patients in presumed septic shock have been 250 mL, lower than other conditions. Recent treatment of sepsis, however, employs higher amounts of fluid, so the protocol has been changed to 500 mL boluses. This should help with earlier reversal of hypotension in septic patients. Many of these patients are elderly and should be monitored for fluid overload, but the higher bolus quantity is consistent with the hospital approach to sepsis.

Annex D: The initial revision is completed and has been forwarded to OES for review. It includes patient care capacity minimums for the immediate movement of initial patients to hospitals.

12-Lead False Positive: A patient had a 12-lead performed due to the firing of internal AICD. There was a pacemaker discharging and the 12-lead interpretation was ***Acute MI***. Remember a pacemaker will cause the 12-lead to mimic the ST elevation of a STEMI.

Hydrogen Sulfide: There continue to be rare reports around the country of individuals committing suicide with devices that generate hydrogen sulfide. It is believed there could be an explosive risk in some cases, and exposure to hydrogen sulfide gas can cause problems. It is felt, however, that if the patient is in an automobile, as in a typical case, and there is some sign of life such as breathing or movement, there should not be an explosive risk. These patients can be removed from the vehicle using appropriate personal protective equipment.

Aerosol Transmittable Diseases (ATD): As of September 1, 2010 the OSHA ATD regulations mandate use of a P-100 mask for invasive aerosol generating procedures in patients with active tuberculosis and “novel or unknown pathogens.” These include intubation, tracheal suctioning, and aerosol treatments. H1N1 is still considered a novel virus, despite more than one year of experience with the virus. There is a push to get H1N1 re-categorized as a seasonal influenza virus now that it has generally replaced other influenza viruses in the community, for now. That would loosen the PPE requirement.

Provider agencies should review their ATD procedures. Focus on PPE, monitoring of exposures, evaluation for prophylaxis and follow-up. The recent enforcement actions focus on these areas and may be reviewed at the Department of Industrial Relations website: www.dir.ca.gov/dosh/citation.html.

Pediatric CPR: An unresponsive two-year-old was being transported with underlying illnesses including hydrocephalus. The heart rate was initially 100/min but dropped to 54/min during transport. The physician ordered CPR initiated.

Current PALS protocols recommend that if despite oxygenation and ventilation, the pulse is less than 60 beats/min associated with signs of poor perfusion such as pallor or cyanosis, that chest compressions should be begun. A profound bradycardia and the presence of poor perfusion is an indication for chest compressions, as cardiac arrest is imminent.

Jimson Weed: There have been reports of Jimson Weed abuse by young people. Jimson Weed produces an anticholinergic effect with dilated pupils, tachycardia and in sufficient doses, altered mental status. The delirium is manifested by restlessness, disorientation, severe agitation, visual and auditory hallucinations, and incoherent speech. The speech may be “staccato” in nature. Remember “Dry as a bone, Red as a beet, Hot as Hades, Blind as a bat, Mad as a hatter, Stuffed as a pipe.”

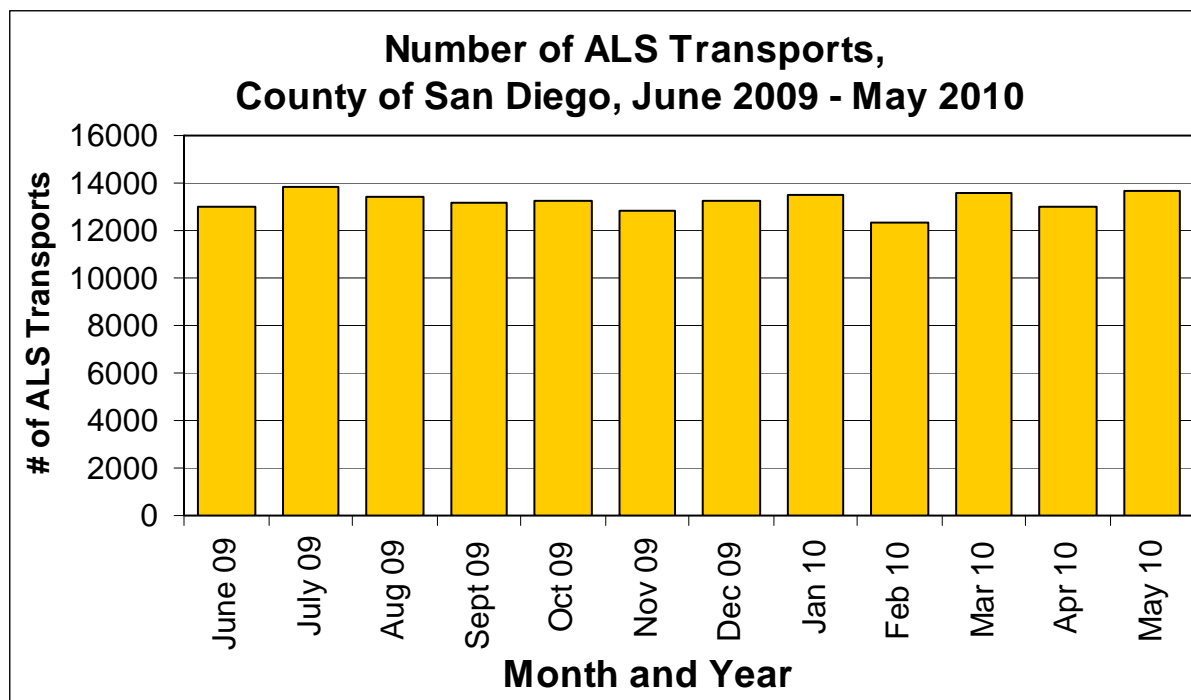
Be alert for these cases. Patients may place themselves at risk with unpredictable responses. Field treatment is for altered level of consciousness similar to excited delirium. Sedation with midazolam will be needed in severe cases. Hyperthermia may require cooling measures.

Pearls: New Pearls are coming out. Please review these when they are issued. Topics will include assuring a wide scene survey, caution on back-to-bed calls, avoiding AMAs, Vagal Nerve Stimulators as treatment for seizure disorders, downplaying postural vitals signs in the field and avoiding posturals in potentially unstable patients.

2010 Project: Implementation of the changes to EMT certification and discipline will occur on July 1st. EMTs will be entered into a statewide registry, state fees will be imposed for the first time, and new rules will govern disciplinary procedures and appeal processes. In addition, employers will have new responsibilities for discipline.

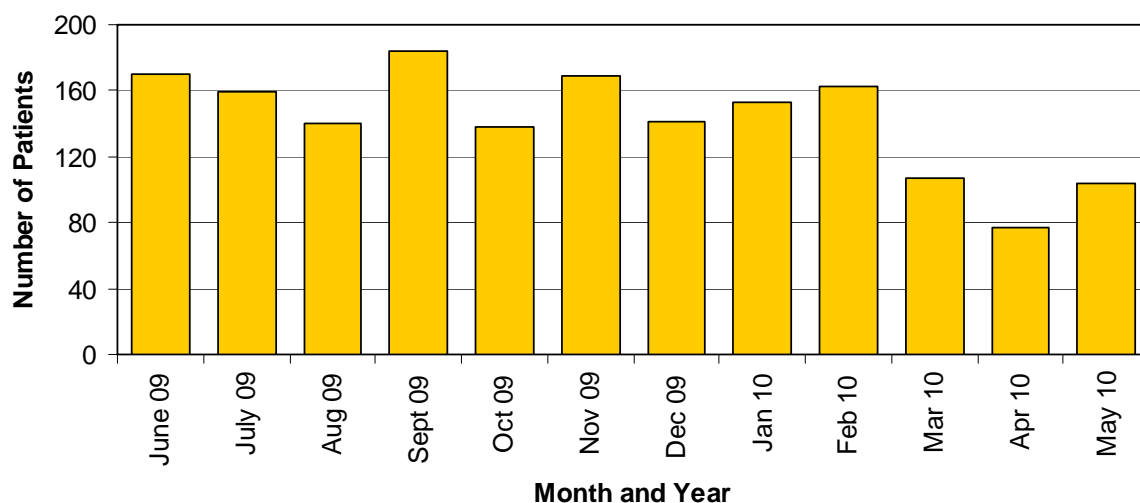
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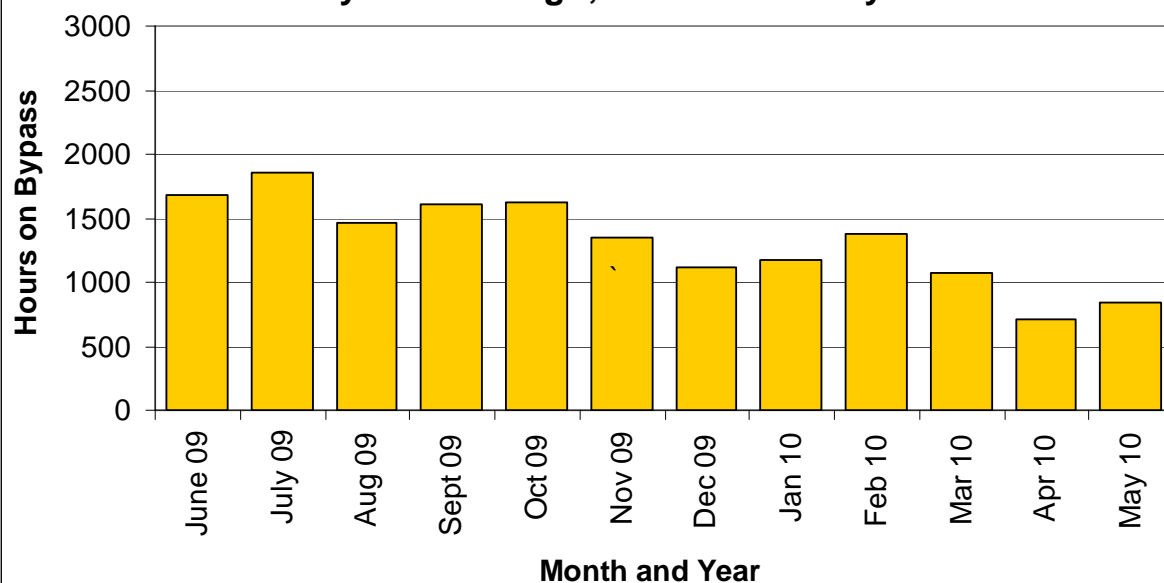
Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Jun 2009 – May 2010 Note: Numbers based on Run Outcomes of Transport by Unit and Transport by Other

Number of Patients who Bypassed the Requested Hospital, County of San Diego, June 2009 - May 2010



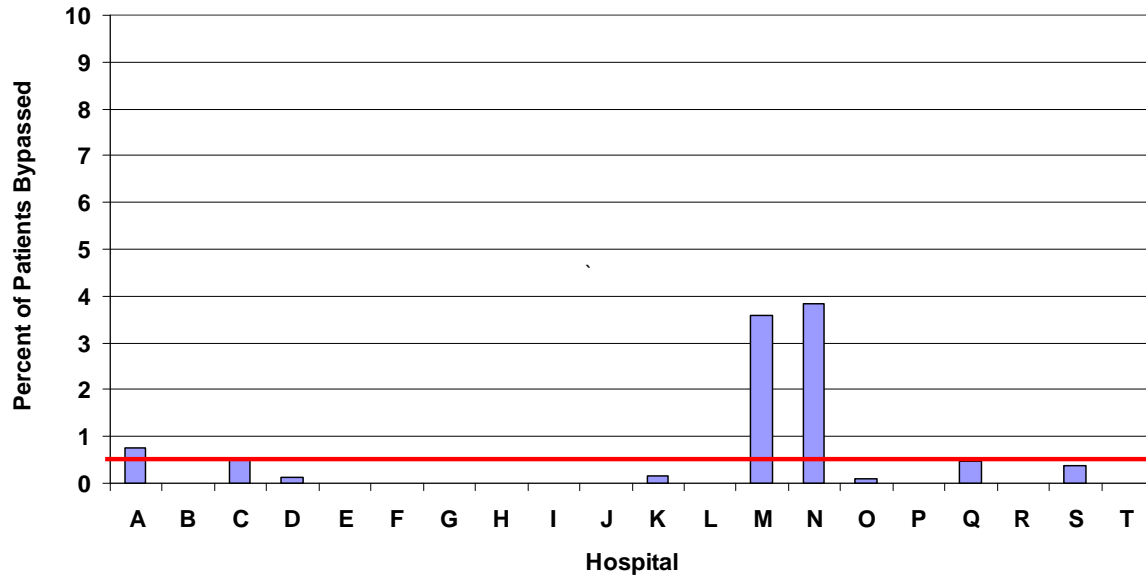
Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Jun 2009 – May 2010 Note: Numbers based on Run Outcomes of Transport by Unit and Transport by Other

Total Hours on Emergency Department Bypass County of San Diego, June 2009 - May 2010



Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, June 2009 – May 2010

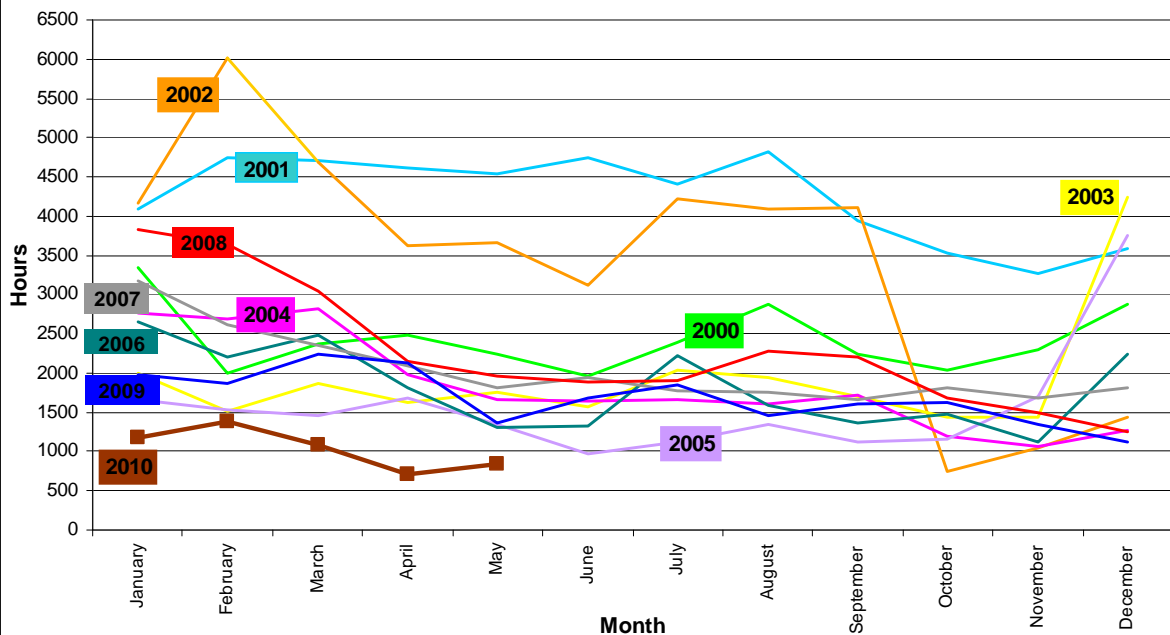
Percent of Patients Bypassed per Hospital, May 2010



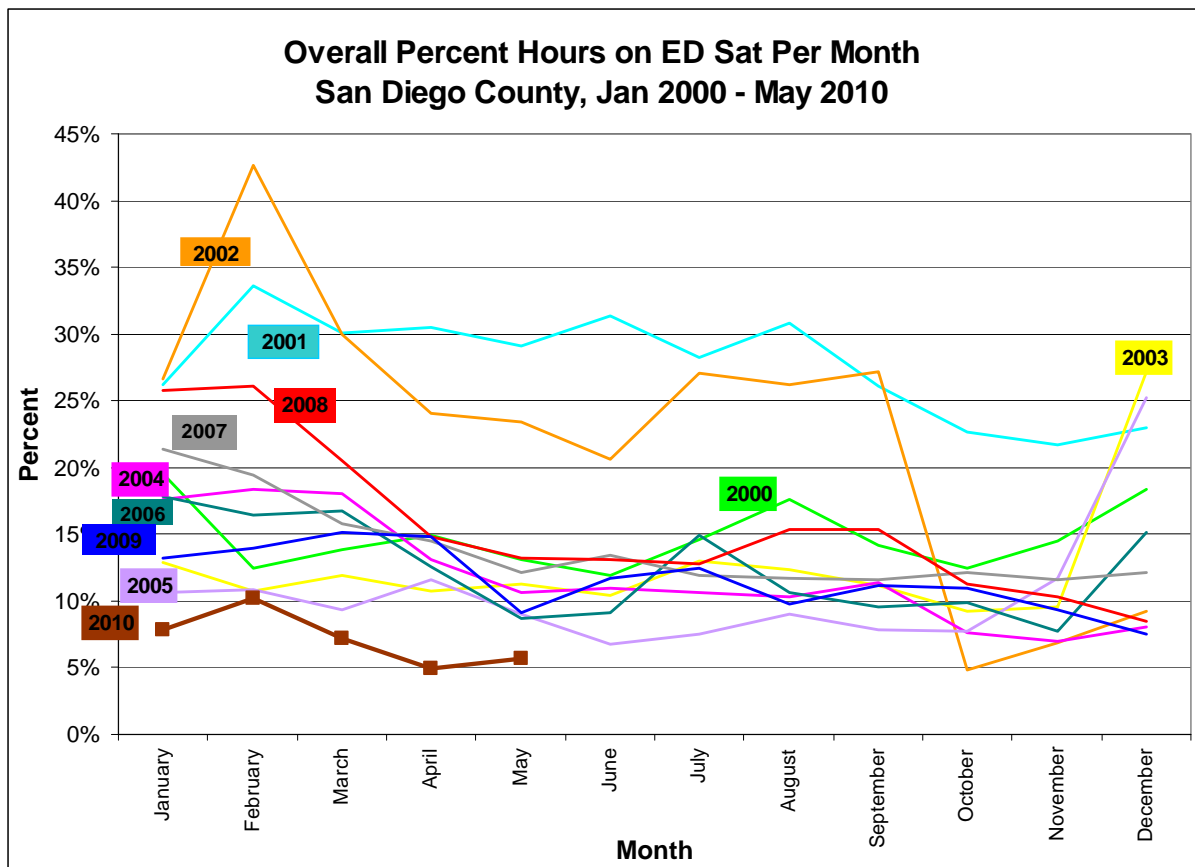
Note: The red line represents the mean value of percent of patients bypassed per hospital, May 2010

Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, May 2010 Note: Numbers based on Run Outcomes of Transport by Unit and Transport by Other

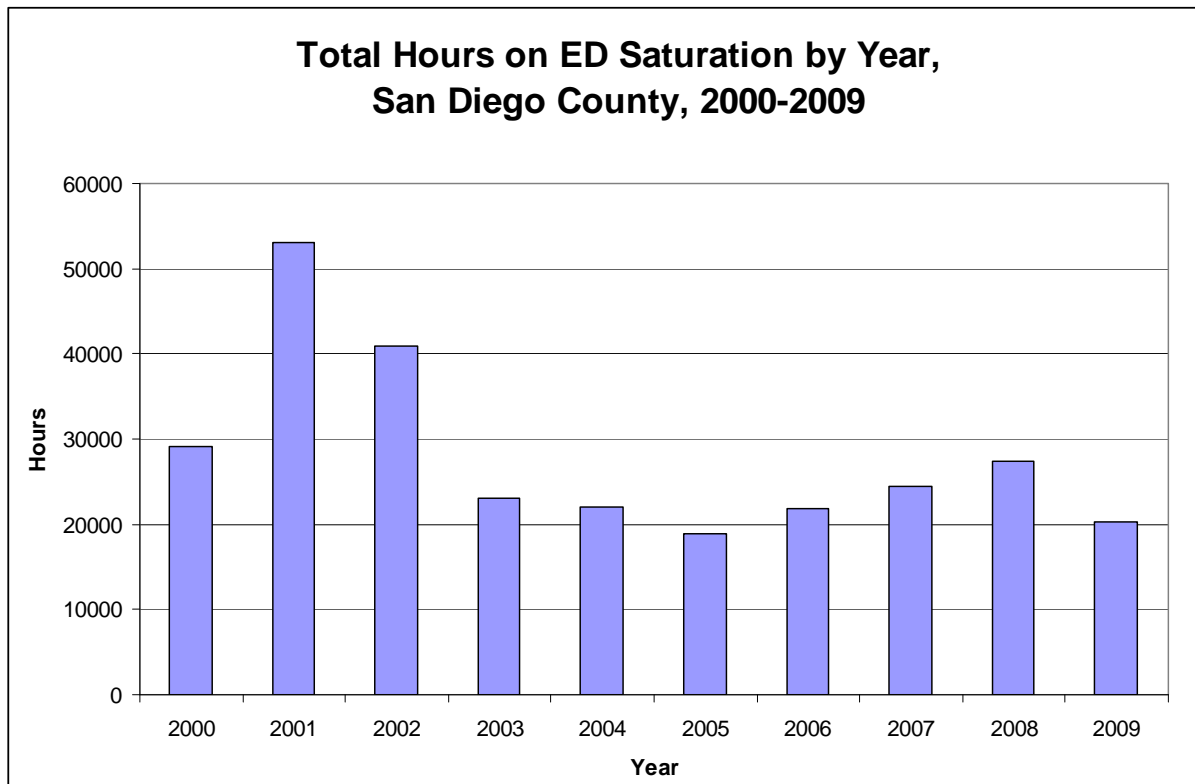
Total Hours on ED Saturation by Month and Year, San Diego County, Jan 2000 - May 2010



Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Jan 2000 – May 2010

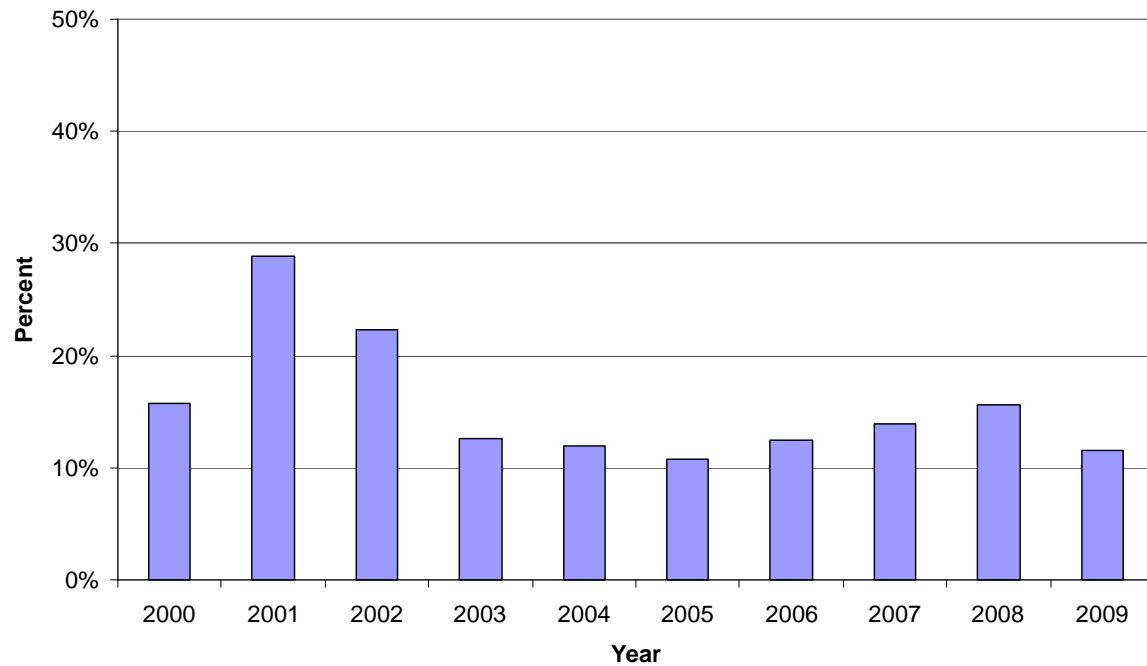


Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Jan 2000 – May 2010. Note: 2008 line extended to June due to chart formula, no data for this future date



Source: County of San Diego, Health and Human Services Agency, Emergency Medical Services, MICN Records, 2000 – 2009

Overall Percent Hours on ED Saturation by Year, San Diego County, 2000-2009



Source: County of San Diego, Health and Human Services Agency, Emergency Medical Services, MICN Records, 2000 – 2009



NICK MACCHIONE, FACHE
DIRECTOR

WILMA J. WOOTEN, M.D., M.P.H.
PUBLIC HEALTH OFFICER

County of San Diego

HEALTH AND HUMAN SERVICES AGENCY

PUBLIC HEALTH SERVICES

1700 PACIFIC HIGHWAY, SAN DIEGO, CALIFORNIA 92101-2417
(619) 531-5800 FAX (619) 515-6707

Bruce E. Haynes, M.D.
Medical Director
Division of Emergency Medical Services
6255 Mission Gorge Road
San Diego, CA 92120-3599
(619) 285-6429 FAX:(619) 285-6531

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Medical Director's Update for Base Station Physicians' Committee July/August 2010

Drug Shortages: We continue to experience shortages of epinephrine 1:10,000 and now dextrose 50%. The epinephrine shortage has not been an operational problem with the availability of epinephrine 1:1,000 and the ability to quickly dilute from the IV line. Dextrose 50% prefills are in short supply as well, and now the 50 mL vials are becoming hard to find. Reports on the length of time we are facing these shortages continue to be variable: Anywhere from mid-July (now passed) to as late as September or October.

Faced with shortages, providers should obtain the lower concentrations of dextrose that are available from their suppliers, for example, dextrose 25% or dextrose 10%.

Dextrose 25% in a prefill or from a vial can be administered in an adult dose of 25 grams found in 100 mL of dextrose 25%. The pediatric doses are found in the Pediatric Drug Chart (P-117) that contains the Broselow color dose for dextrose 25%.

What may be easiest to find and fairly easy to use is dextrose 10%. Because of the larger volumes, this must be administered as an infusion with the adult dextrose dose of 25 grams found in 250 mL dextrose 10%. One of the local suppliers obtained a supply of dextrose 10% in 500 mL bags. The initial adult dose would be 250 mL (one-half of the 500 mL bag), leaving a second dose available for follow up infusion, if needed. You should check with your supplier about dextrose 10% if needed.

A pediatric dose chart for dextrose 10% has been developed and reads as follows:

**County of San Diego Emergency Medical Services
Dextrose 10% for pediatrics**

<u>Size range</u>	<u>GM dose</u>	<u>mL 10% Dextrose</u>
Gray/Pink	2.5 gm	25 mL
Red/Purple/Yellow	5 gm	50 mL
White	7.5 gm	75 mL
Blue	10 gm	100 mL
Orange	12.5 gm	125 mL
Green	17.5 gm	175 mL

For pediatric administration of dextrose 10%, up to 100 mL should be given in 20 mL portions, using the 20 mL syringes available. For 125 mL and 175 mL doses, the excess dextrose solution should be wasted, and then the dose administered intravenously.

If no dextrose is available then glucagon should be used in its place. In addition, the minimal blood glucose level requiring treatment has been lowered. You may use 60 mg/dL on the glucometer reading as an indication for dextrose administration or glucagon use rather than the current symptomatic patient level <75 mg/dL. This will identify patients who may need oral glucose but are unlikely to require an intravenous agent. Symptomatic patients with glucose levels between 60 and 75 mg/dL may receive either oral or IV glucose under standing orders. Finally, in the unlikely event neither dextrose nor glucagon are available for the hypoglycemic patient, then immediate transport to the nearest hospital should be initiated.

For any questions, contact your Base or EMS.

Pertussis: Pertussis (Whooping cough) cases have increased rapidly this year reaching what is considered epidemic levels. Pertussis can result in severe illness especially among the young, less than three months of age. Deaths have occurred in the state and the number of admissions to intensive care units has risen. Adult vaccination is important to pertussis control. Those with young infants in their family are targets for vaccination as adults. This involves receiving Tdap as one vaccination that also contains tetanus and diphtheria. One does not have to wait until the need for a tetanus shot in order to get the Tdap and receive the protection from pertussis. Just as important as family members are EMS personnel. EMS personnel may contract pertussis from their patients and end up ill for a long period of time with a persistent, unpleasant cough. More importantly, they may become ill, even mildly so, and be unaware they are transmitting the virus to their young patients. It is important

to prevent the transmission of pertussis to our EMS patients. All EMS personnel should make an effort to get a Tdap vaccination.

EMT 2010 Project--Protect your license: The new EMT licensing procedures in the “2010” project are underway with minimal disruption. The new system includes the addition of a national FBI background check to our California Department of Justice fingerprint background check, and the placement of all EMTs in the state in a Central Registry for identification and monitoring purposes. Finally, disciplinary actions and appeals will utilize the state Administrative Procedures Act, a more formal system than the previous Investigative Review Panel (IRP) system used for appeals.

All EMTs should be aware of the potential impact of a criminal arrest and conviction on their career. The authority to take action against a certificate is found in California law—the statutes. More specific rules regarding specific violations are found in the new EMT Process for Disciplinary Action regulations. The state is using the same criteria for criminal convictions that are used for paramedics, and some violations may result in disciplinary or licensure action and loss of the EMT’s Certificate.

The statute, found in California Health and Safety Code section 1798.200, defines the types of actions that may result in disciplinary action against an EMT (or paramedic) license:

“(c) Any of the following actions shall be considered evidence of a threat to the public health and safety and may result in the denial, suspension, or revocation of a certificate or license issued under this division, or in the placement on probation of a certificate or licenseholder under this division:

- (1) Fraud in the procurement of any certificate or license under this division.
- (2) Gross negligence.
- (3) Repeated negligent acts.
- (4) Incompetence.
- (5) The commission of any fraudulent, dishonest, or corrupt act that is substantially related to the qualifications, functions, and duties of prehospital personnel.
- (6) Conviction of any crime which is substantially related to the qualifications, functions, and duties of prehospital personnel. The record of conviction or a certified copy of the record shall be conclusive evidence of the conviction.
- (7) Violating or attempting to violate directly or indirectly, or assisting in or abetting the violation of, or conspiring to violate, any provision of this division or the regulations adopted by the authority pertaining to prehospital personnel.
- (8) Violating or attempting to violate any federal or state statute or regulation that regulates narcotics, dangerous drugs, or controlled substances.
- (9) Addiction to, the excessive use of, or the misuse of, alcoholic beverages, narcotics, dangerous drugs, or controlled substances.
- (10) Functioning outside the supervision of medical control in the field care system operating at the local level, except as authorized by any other license or certification.
- (11) Demonstration of irrational behavior or occurrence of a physical disability to the extent that a reasonable and prudent person would have reasonable cause to believe that the ability to perform the duties normally expected may be impaired.

(12) Unprofessional conduct exhibited by any of the following:

(A) The mistreatment or physical abuse of any patient resulting from force in excess of what a reasonable and prudent person trained and acting in a similar capacity while engaged in the performance of his or her duties would use if confronted with a similar circumstance. Nothing in this section shall be deemed to prohibit an EMT-I, EMT-II, or EMT-P from assisting a peace officer, or a peace officer who is acting in the dual capacity of peace officer and EMT-I, EMT-II, or EMT-P, from using that force that is reasonably necessary to effect a lawful arrest or detention.

(B) The failure to maintain confidentiality of patient medical information, except as disclosure is otherwise permitted or required by law in Sections 56 to 56.6, inclusive, of the Civil Code.

(C) The commission of any sexually related offense specified under Section 290 of the Penal Code.”

The violations above could result in action against a person’s certificate.

Under the new state EMT regulations the EMS Medical Director is now required to deny an application for an EMT license or to revoke an EMT license if any of the following apply to the EMT:

“(c) The medical director shall deny or revoke an EMT or Advanced EMT certificate if any of the following apply to the applicant:

(1) Has committed any sexually related offense specified under Section 290 of the Penal Code.

(2) Has been convicted of murder, attempted murder, or murder for hire.

(3) Has been convicted of two (2) or more felonies.

(4) Is on parole or probation for any felony.

(5) Has been convicted and released from incarceration for said offense during the preceding fifteen (15) years for the crime of manslaughter or involuntary manslaughter.

(6) Has been convicted and released from incarceration for said offense during the preceding ten (10) years for any offense punishable as a felony.

(7) Has been convicted of two (2) or more misdemeanors within the preceding five (5) years for any offense relating to the use, sale, possession, or transportation of narcotics or addictive or dangerous drugs.

(8) Has been convicted of two (2) or more misdemeanors within the preceding five (5) years for any offense relating to force, threat, violence, or intimidation.

(9) Has been convicted within the preceding five (5) years of any theft related misdemeanor.

(d) The medical director may deny or revoke an EMT or Advanced EMT certificate if any of the following apply to the applicant:

(1) Has committed any act involving fraud or intentional dishonesty for personal gain within the preceding seven (7) years.

(2) Is required to register pursuant to Section 11590 of the Health and Safety Code.”

Note that conviction of any theft related misdemeanor would result in the loss or denial of an EMT license if it occurred within the preceding 5 years. Many drug convictions currently involve multiple counts whether a felony or misdemeanor, and result in loss or denial of a license. Section 11590 of the Health and Safety Code refers to individuals who must report for drug offenses.

One of the biggest offenses we see is Driving Under the Influence (DUI). This is covered in the statutes above, and in a separate section of the EMT disciplinary regulations from that reprinted above. A DUI arrest of an EMT will trigger an evaluation to determine if the EMT is safe to practice as the legal process is underway for a period of months. An individual with evidence of impairment may have their license immediately suspended. A conviction may lead to the requirement for an evaluation by a professional addiction specialist to determine if the licensee is impaired. For EMT license applicants, the evaluation process will be triggered by a conviction within the previous five years.

This EMS license process is in addition to the high legal and insurance cost of the DUI. An EMT who is impaired by substance abuse would be wise to seek treatment and get the situation resolved before it results in an arrest or other reason for a licensure action.

Fiftieth Anniversary CPR: An editorial in JAMA (July 7, 2010) reported that July 9th was the 50th Anniversary of CPR with a published report in JAMA in the July 9, 1960 issue. Kouwenhoven reported the results of chest compressions in hospital patients with sudden cardiac arrest. These were closed chest compressions, unlike the open CPR using thoracotomy that had been required for CPR previously. Two months later at the Maryland Medical Society the technique was demonstrated and Dr. Peter Safar shared data supporting the benefit of mouth-to-mouth ventilation. The two techniques were combined at that meeting and modern CPR was born.

The editorial's author Dr. Eisenberg goes on to discuss some of the great triumphs and some of the work remaining to be done in the treatment of cardiac arrest in patients needing CPR.

Another anniversary will come in the next several years, in some ways the birth of prehospital care. This will be on the 50th anniversary of the initial reports from the Royal Victoria Hospital in Belfast where cardiologist Frank Pantridge developed a flying team of CCU nurses with large, bulky defibrillators powered by a stack of 12 volt batteries wired in sequence to be able to deliver defibrillation shocks at a patient's home after being called there by the patient's family physician. These patients were suffering from myocardial infarction. A number of these patients did arrest in the field and were successfully resuscitated. These reports generally published in the British medical literature quickly found their way to the United States in the beginning of similar systems with either CCU nurses or later, fire personnel delivering field care for cardiac arrest.

Dispatch Compression-only CPR: Compression only CPR for the first minutes of CPR is equivalent to CPR with ventilations when directed by dispatchers, according

to two articles in the New England Journal of Medicine. The two similar studies compared patients with presumed cardiac cause--primary respiratory causes and trauma were excluded and included only adults. In Seattle there was no difference among the 1,941 patients in the two groups in either hospital survival or in good neurologic outcome. In Sweden, 1,275 patients were in two groups and there was no difference in 30-day survival. The results reinforce the view that early in cardiopulmonary arrest due to a cardiac cause, ventilations are unnecessary. Similar findings have been seen in Japan.

Bypass hours: These continue to remain at a low level. There is a little spike of increase, but overall the tremendous efforts of the hospitals to maintain low bypass hours are continuing in response to the re-engineering efforts and have been superb. Congratulations again for this effort.

Influenza: H1N1 influenza continues to be present in very low levels in the community. H1N1 will be present in the fall influenza vaccine and there are no reports to this point of mutations or changes in the virus that would make the vaccination or treatment drugs less effective.

Annex D: The draft of Annex D sent to the Office of Emergency Services (OES) had a revision subcommittee consider a number of changes to the document. These have been prepared and should be returned soon to OES for further review.

Fall Prevention: Falls have a devastating impact on patients who suffer injuries, especially the elderly for whom a fall can result in death or the loss of their independence with institutionalization in a skilled nursing facility or other location. The prevention of falls is important to maintain the quality of life for the elderly and to prevent major injuries and death.

Information on fall prevention to be communicated to patients or for quick evaluations of the home can be found at the Fall Prevention Task Force administered by the County and available at the website www.sandiegofallprevention.org. In particular, you may link there to an excellent, brief 8 minute video, "Fall Prevention for Clinicians" that hits the high points. This website also has tools for the evaluation of fall dangers in the home. We would recommend that you review the video and become familiar with some of the issues related to fall prevention so that it can be communicated to your patients, or to the public before they suffer a fall injury.

New Protocols: The new protocols are effective with the changes described in the last Medical Director's Report. We look forward to seeing the changes in practice. A review for potential changes for next year is beginning already. If you have any suggestions, please forward them to Susan Smith, R.N. at Emergency Medical Services.

CEMSIS: The new CEMSIS data system was effective July 1st. It seems to be going well. There are additional fields and the MICNs are working through that data collection and recording. For any suggestions, please contact EMS.

Paramedic Licensing Delays: This time of year is a heavy load of paramedic license renewals for the State EMS Authority. Avoid being put off work for not having a license and do it as soon as you can. Return the required materials to the State for re-licensure quickly. In cases where the medic has come down to their renewal date and has not received their license from the State, check the public licensure website now available at the State EMS Authority website. This may show that that paramedic has been renewed and has a current license, despite not receiving the physical card. The renewal status on the public website is sufficient evidence that the paramedic is licensed and they do not have to have their physical license in order to continue practice.

Television Safety: There have been recent deaths as a result of tip over accidents involving televisions and young children, causing head injury and skull fractures or other injury. Televisions can be placed on furniture that is appropriate for the size of the television or a low rise base pushed back as far as possible. Do not place tempting items, toys or other objects on the top of the television and do not allow children to climb on or play with furniture or television sets. Flat panel displays should not be placed on furniture that can be used as steps such as a chest of drawers. Furniture straps can be placed on all home theatre equipment and furniture that can be pulled over, pushed or climbed on. Thanks to Rady Children's Hospital for this information, and they have additional information.

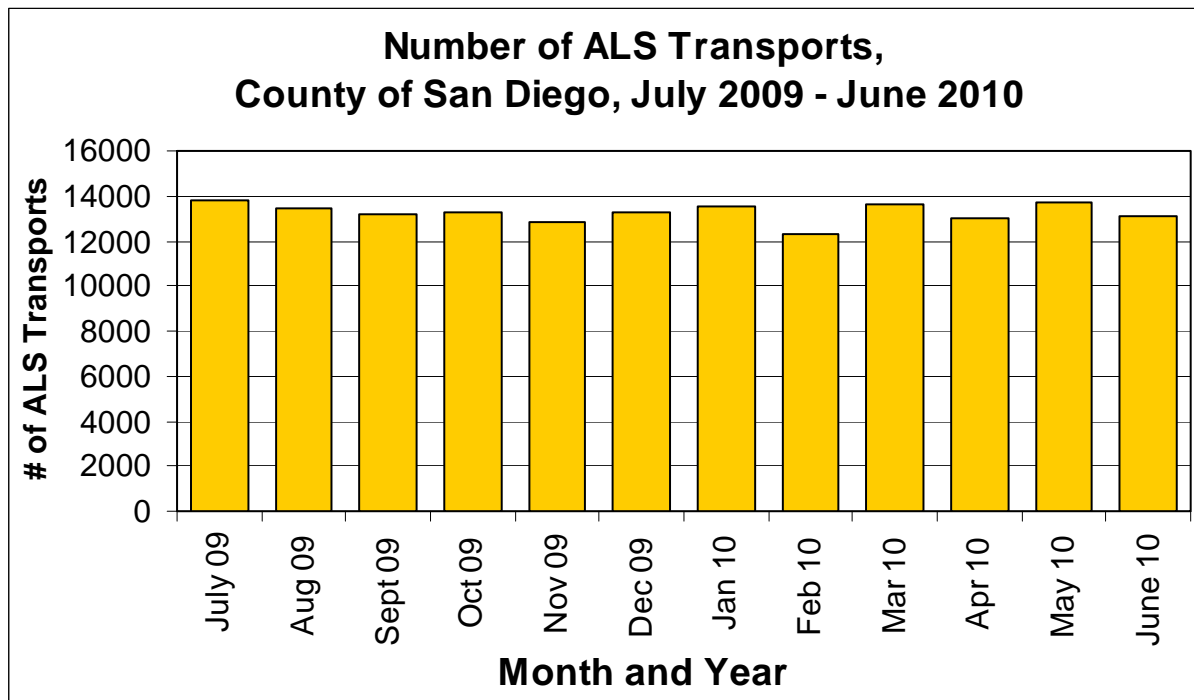
Another important measure for the summer is the prevention of near drowning or drowning. The water watcher concept is critically important for children who are not water safe but in, near, or with access to, a pool. One competent adult is designated to maintain constant visual contact with the children who are in or near the water. This individual continues to observe the children and either keep a telephone near the water or refrain from going in the house to answer the phone or get distracted from answering a cell phone so that their complete attention is not on the young children. Actual Water Watcher tags are available from Rady Children's Hospital in cooperation with Epic Medics at epicmedics.org.

Field/Hospital Photographs: Photographs including those taken with cell phone cameras should not be taken of patients in the field or in the hospital. Even if the patient is not visually identified the nature of the injuries and the date may lead to patient identification and a violation of privacy laws. Hospitals have prohibitions against photography and pictures taken for teaching purposes, documentation of procedures, or other potentially valid reasons may not be taken in a hospital. Do not post photographs of an incident (not just patients) on social media sites.

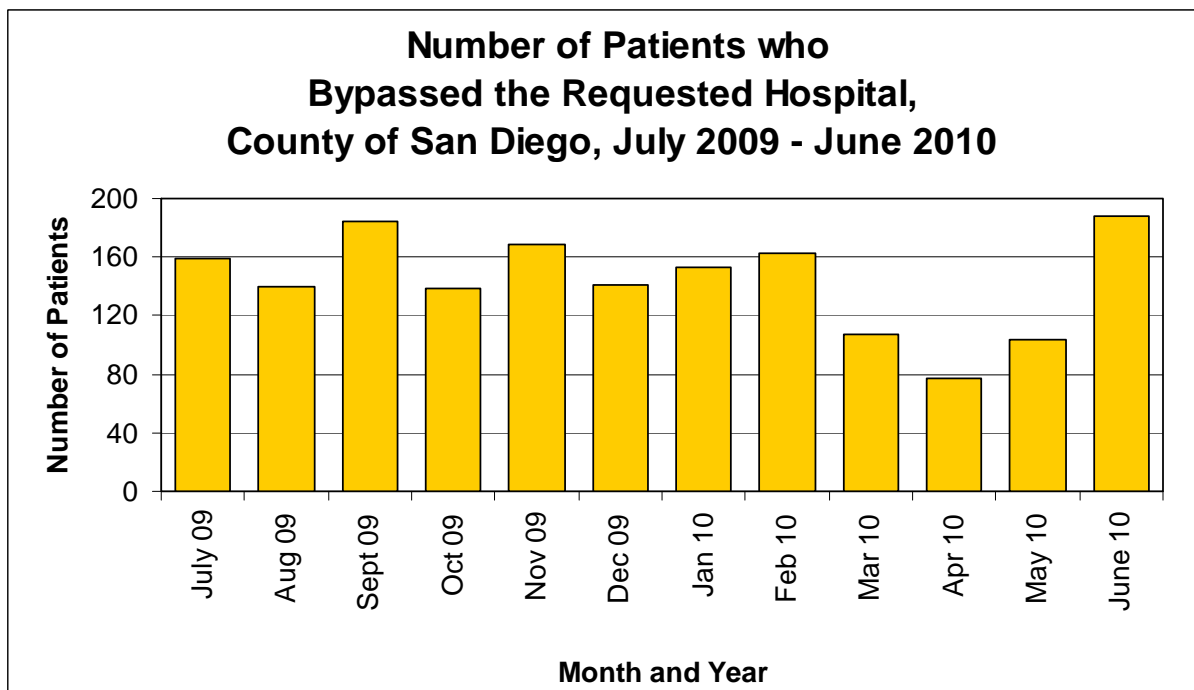
POLST: The POLST forms communicate physician orders for life sustaining treatment following patient requests are beginning to be used more. A recent study released in July showed that patients with a POLST were 59% less likely to receive an unwanted hospitalization or medical intervention than patients without a POLST. Ninety-five percent of people with a POLST got the medical interventions they wanted related to antibiotics vs. 3% of patients without a POLST. And the use of feeding tubes had a similar outcome. The study looked at ninety nursing homes in three

states, although not in California, which has been using the program for a relatively short period of time. We look forward to the POLST being a valuable tool to reflect patient and physician preferences for care, especially at end of life.

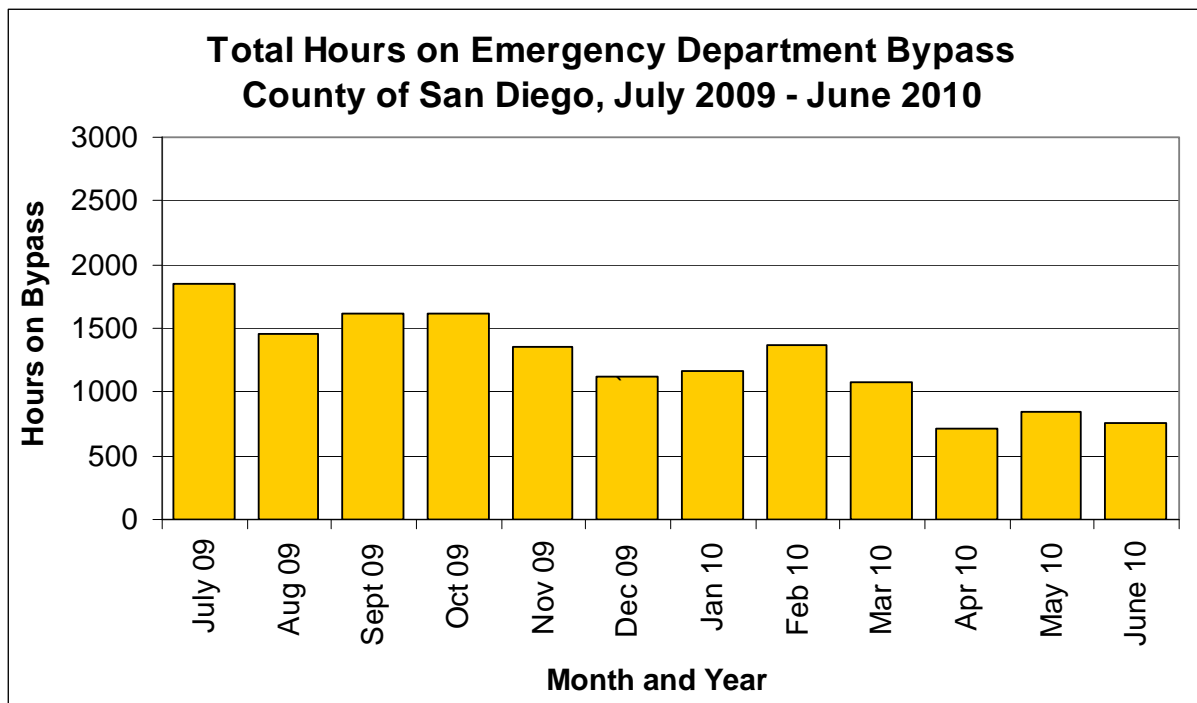
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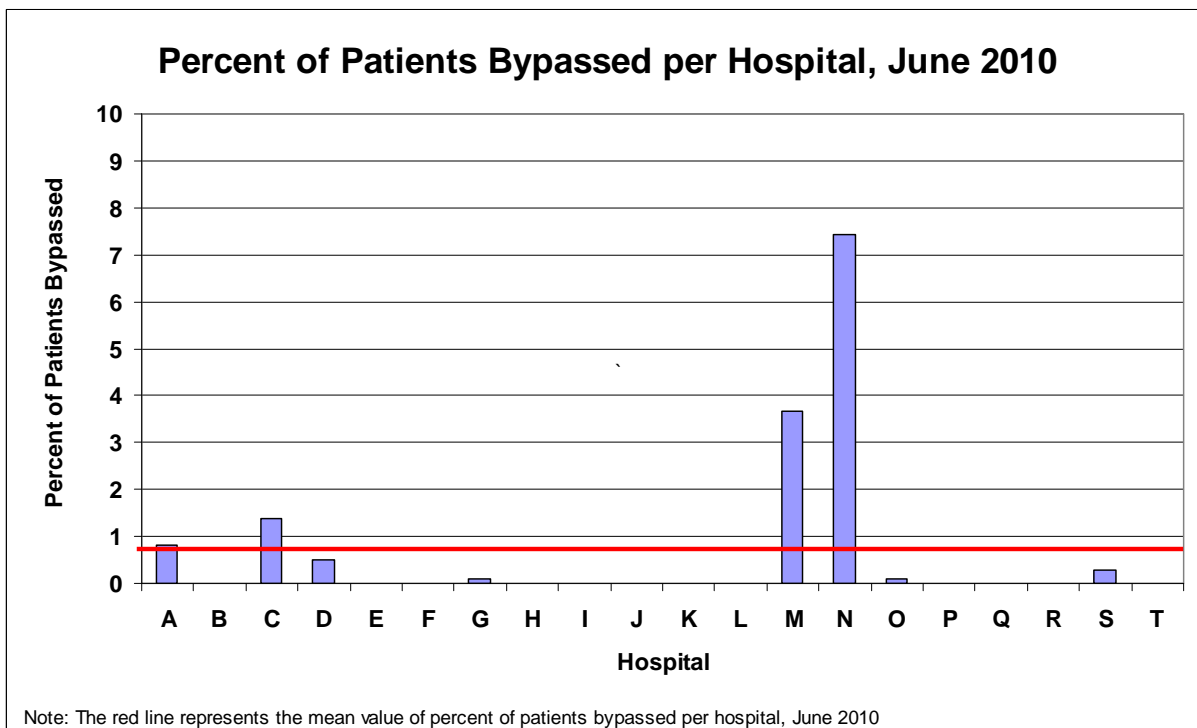
Source: County of San Diego, Health and Human Services Agency, Emergency Medical Services, MICN Records, July 2009 – June 2010 Note: Numbers based on Run Outcomes of Transport by Unit and Transport by Other



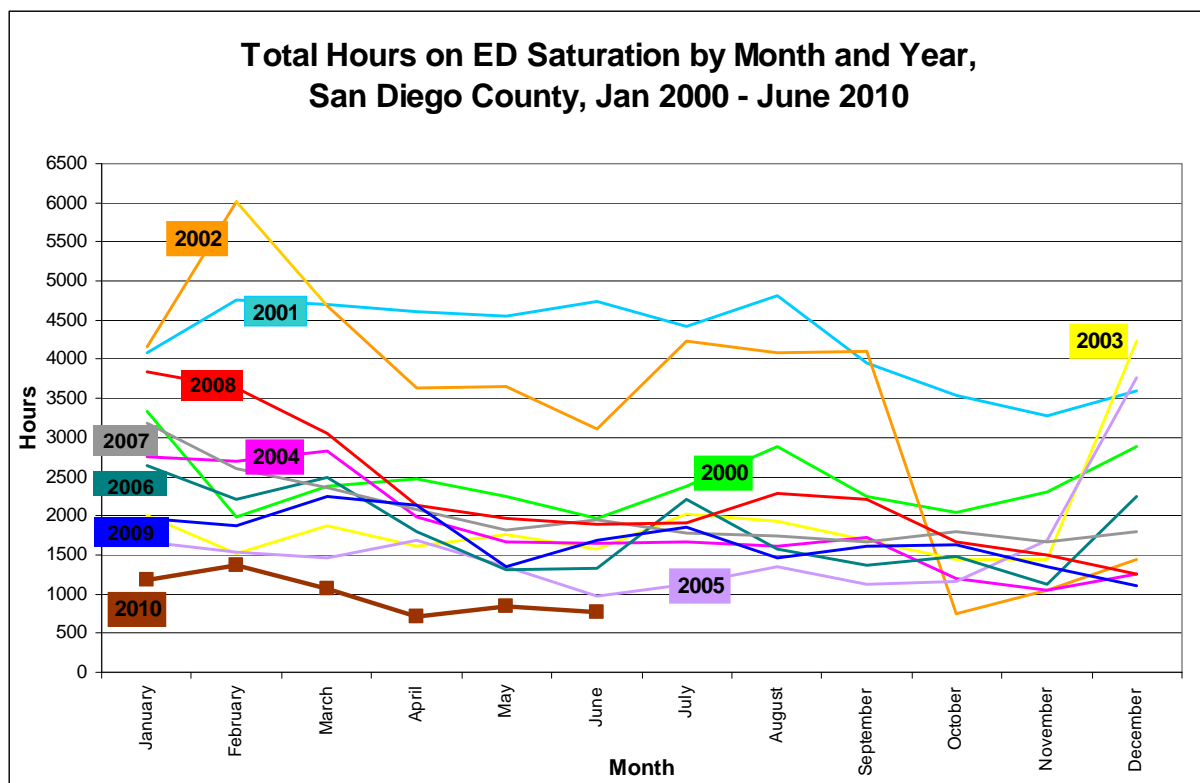
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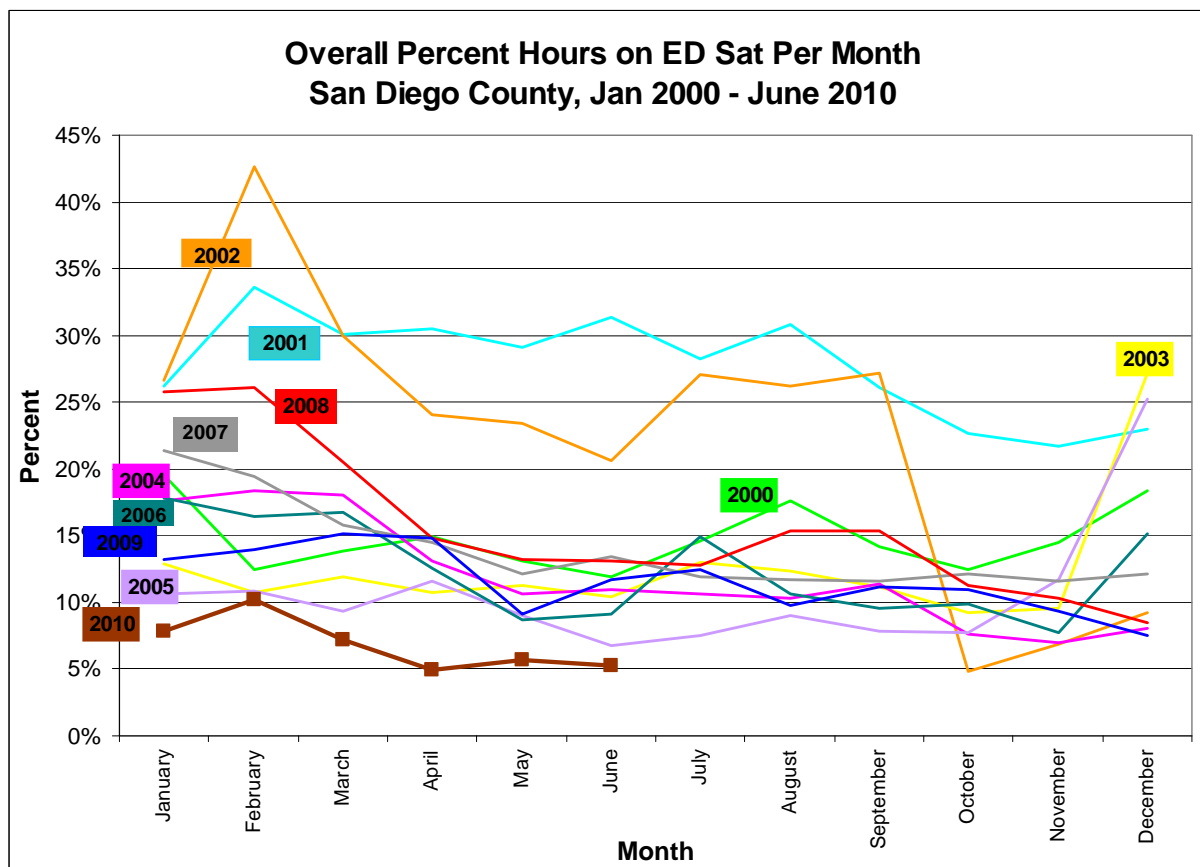
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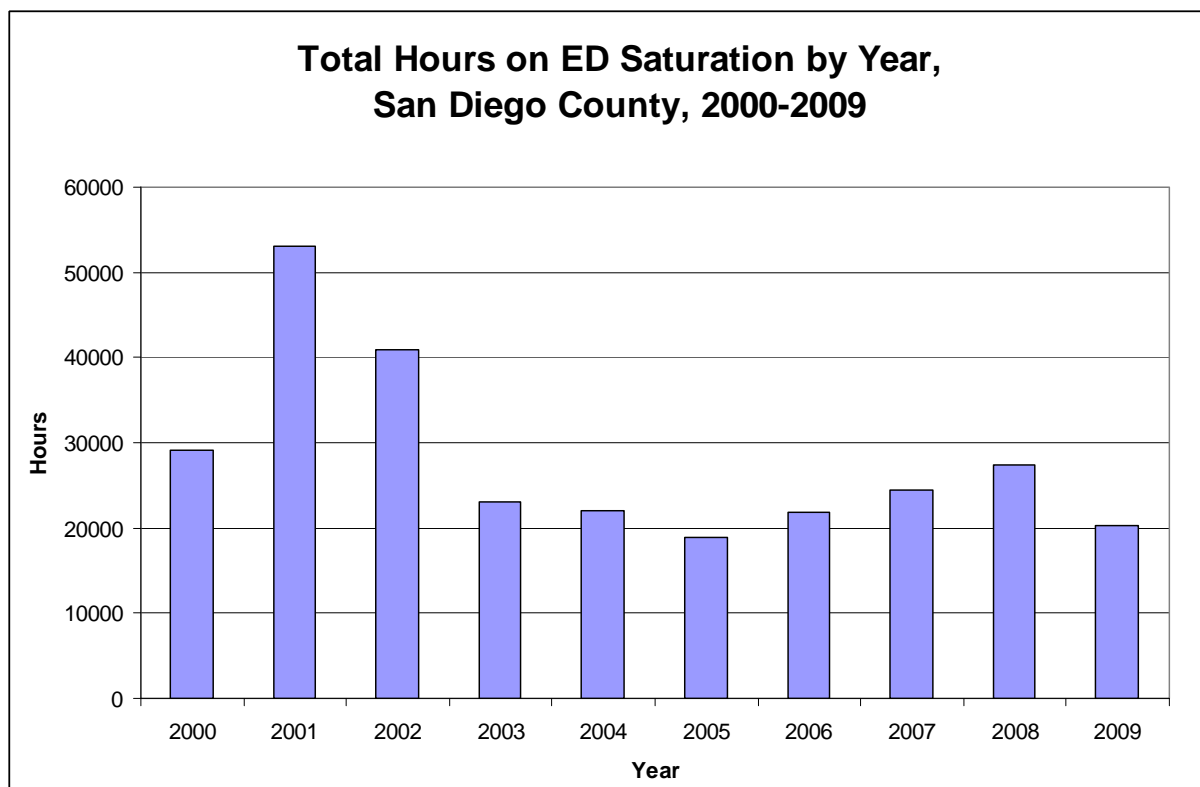
Source: County of San Diego, Health and Human Services Agency, Emergency Medical Services, MICN Records, June 2010
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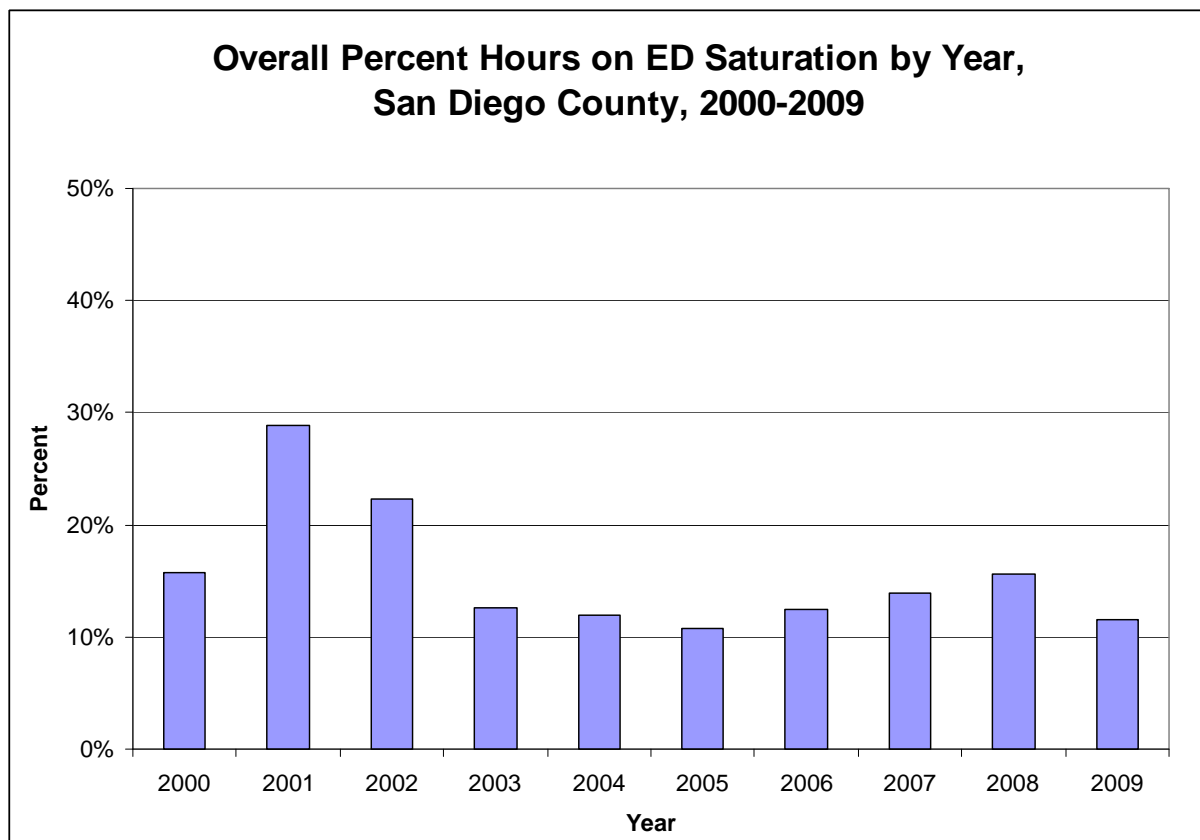
Source: County of San Diego, Health and Human Services Agency, Emergency Medical Services, MICN Records, Jan 2000 – June 2010



Source: County of San Diego, Health and Human Services Agency, Emergency Medical Services, MICN Records, Jan 2000 – June 2010



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NICK MACCHIONE, FACHE
DIRECTOR

WILMA J. WOOTEN, M.D., M.P.H.
PUBLIC HEALTH OFFICER

County of San Diego

HEALTH AND HUMAN SERVICES AGENCY

PUBLIC HEALTH SERVICES

1700 PACIFIC HIGHWAY, SAN DIEGO, CALIFORNIA 92101-2417
(619) 531-5800 FAX (619) 515-6707

Community Epidemiology
Emergency & Disaster Medical Services
HIV, STD and Hepatitis
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Public Health Laboratory
PH Nursing/Border Health
TB Control & Refugee Health
Vital Records

Bruce E. Haynes, M.D.
Medical Director
Division of Emergency Medical Services
6255 Mission Gorge Road
San Diego, CA 92120-3599
(619) 285-6429 FAX:(619) 285-6531

Medical Director's Update for Base Station Physicians' Committee September, 2010

Overcrowding Summit: The summit will be on Wednesday October 13, 2010 this year. Billy Mallon will return and the state's chief of licensing and certification is expected. There will be talks on healthcare reform from the hospital and physician perspective, from a former CMA president. A California Hospital Association speaker will address CalDOCS as a tool for evaluating ED and hospital crowding. RSVP to Christine.santos@sharp.com or 858-499-3518. Space is limited. It should be another great event.

Drug Shortages: The epinephrine and dextrose shortages are resolved at this time, but a new one is upon us. Thanks to everyone for their response to the shortage of prefill epinephrine and dextrose. You all did a great job. Avoid "hoarding" drugs to help prevent shortages.

With no dextrose shortage we return to the higher blood glucose level for treatment in the protocols, namely <75 mg/dL.

We now see the beginning of spot shortages of morphine. Morphine should be available, but may be in different containers and concentrations. Some of you may have to use temporarily single dose vials of morphine 10 mg/mL containing one mL per vial. **Caution: these may resemble vials containing midazolam (Versed).** If you must use morphine in vials, separate the two physically in your drug box. Identify the medication and think about the indication, the reason you are giving the drug. Use the "five rights." Further instructions will be issued.

Wound Botulism: In late August two cases of wound botulism were seen in IV injecting users of black tar heroin. This can be life-threatening so recognition is important. Symptoms include double-vision, ptosis, difficulty speaking and general weakness. The motor weakness can progress distally and involve the respiratory muscles leading to respiratory failure. The patient's mental status remains intact although communication may be difficult. Skin-poppers especially are at risk. Testing, obtaining antitoxin, and other issues were reviewed in a September 3, 2010 CAHAN San Diego alert. If you have a case, epidemiology should be contacted at 619-515-6620.

Pertussis: Pertussis cases hit the highest number since 1955. California has reported 4,017 confirmed, probable and suspected cases this year. We have recommended vaccine for all EMS personnel for several years. The state is recommending all Californians older than 6 months receive a vaccination. The current strategy for immunization puts high priority on vaccinating family and caretakers around young infants.

Almost all deaths are in infants under three months of age. So far in the state, 74% of infants hospitalized are under 6 months of age, and 77% of hospitalized infants under 6 months age are Hispanic.

Diagnosis is often delayed in young children as the onset is often mild—runny nose and little or no fever or cough. Pertussis should be suspected in infants coughing especially with post-tussive vomiting, gagging or gasping, facial color changes when coughing, respiratory distress and seizures. Young infants sometimes experience apnea. This emphasizes the importance of diagnosis.

Influenza: Vaccine is available and immunizations are starting. Everyone in EMS should be vaccinated unless they have a contraindication such as egg or vaccine allergy, or serious reactions, or religious exemption. This year's vaccine includes the H1N1 virus.

Vaccination for EMS personnel is important as virus may be shed for 24 hours before becoming ill, increasing the risk of transmission, and some people with influenza have no symptoms, also increasing the risk of transmission to others. We need to avoid infecting our EMS patients, especially those at the extremes of age, young infants and the elderly. Vaccination also will help maintain an adequate workforce.

The San Diego County Medical Society GERM Commission issued a "white paper" recommending influenza vaccination as a condition of employment for all eligible healthcare workers. This is based on the clear benefits in the medical literature including lower patient and the low level of current healthcare worker vaccination. It is mirrored by a national recommendation from The Society for Healthcare Epidemiology of America.

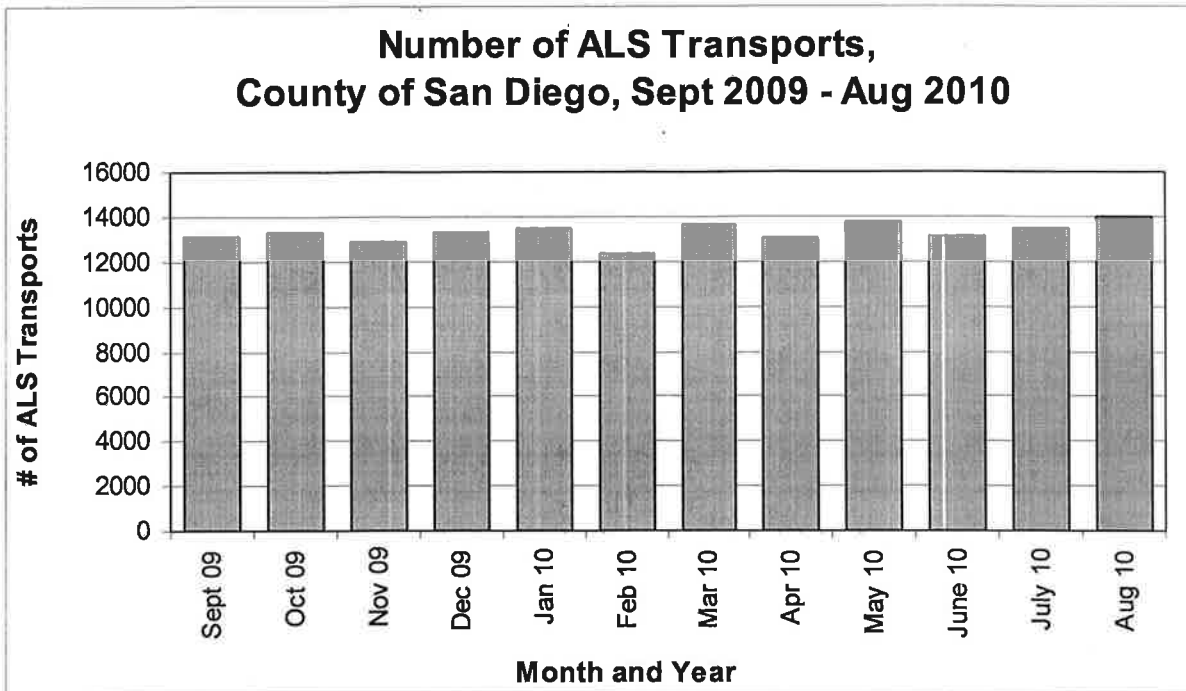
Bypass: Review of transports and bypass time continue to reflect the major efforts made at the hospitals to remain open and take "their" own patients. Thank you to all working so hard maintaining the system.

Ticagrelor (Brilinta): Ticagrelor is a new Plavix-like agent which may be used in patients with renal insufficiency. Look for patients on this agent as well as coumadin, Plavix and similar agents.

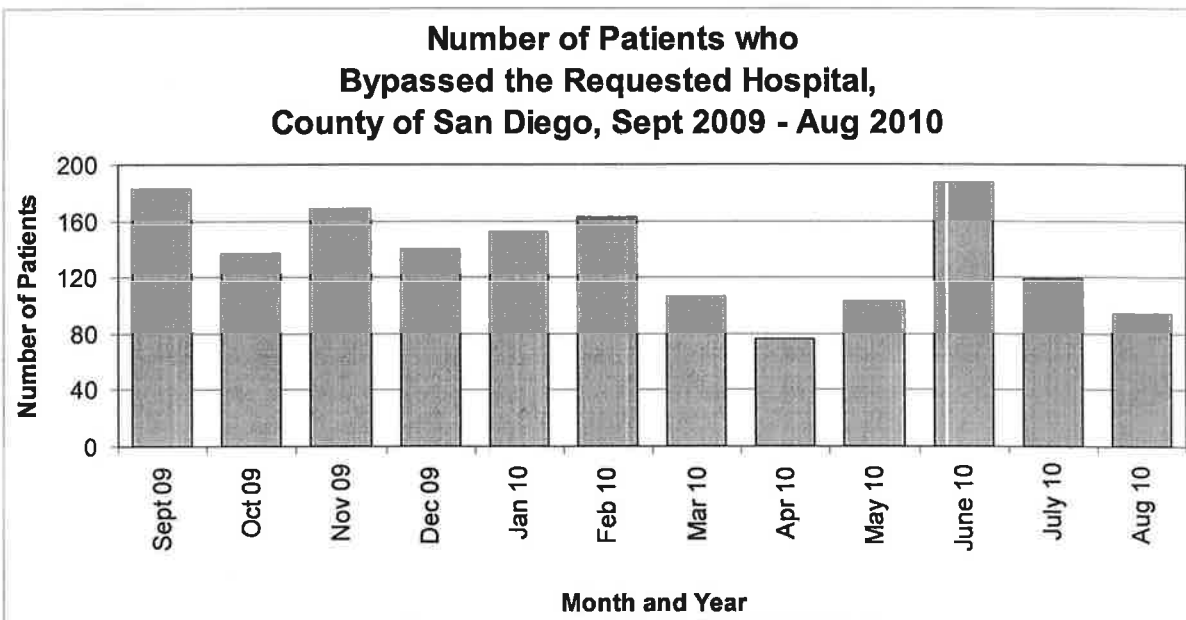
Annex D: The revisions are back at OES and we are awaiting word on adoption of the new protocol.

2011 Protocols: This year will be a major review of the policies and protocols. Please advise your Base, EMS coordinator, or EMS if you have suggestions.

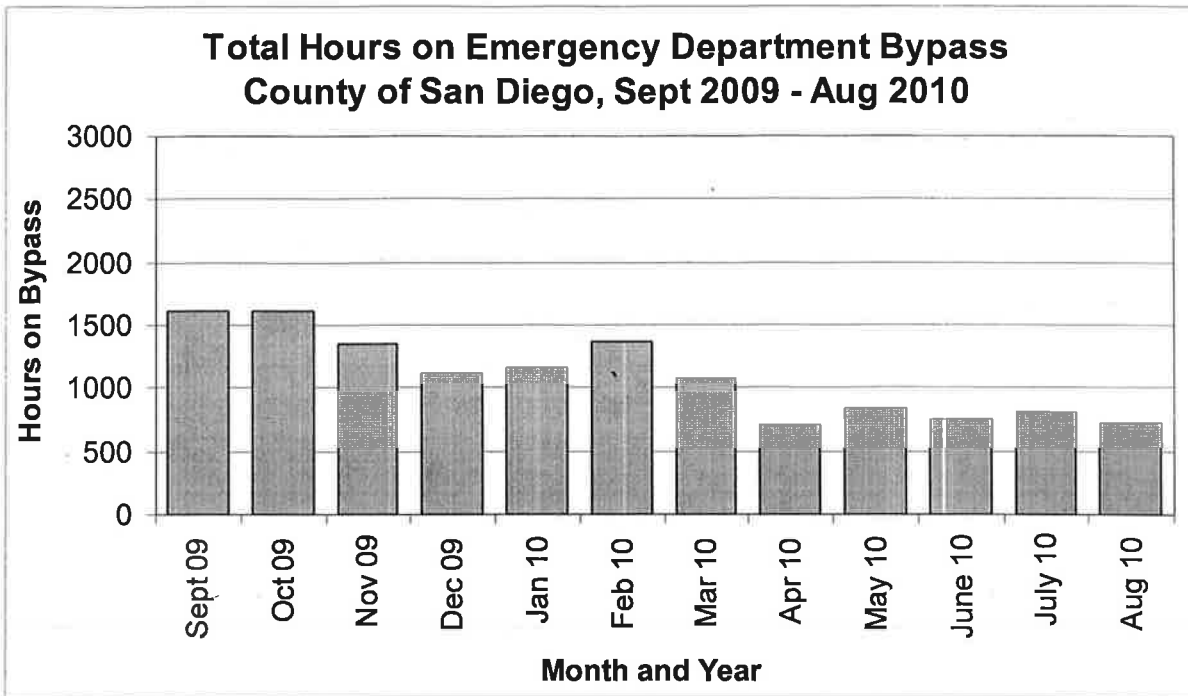
Below are the patient destination data in graphic form:



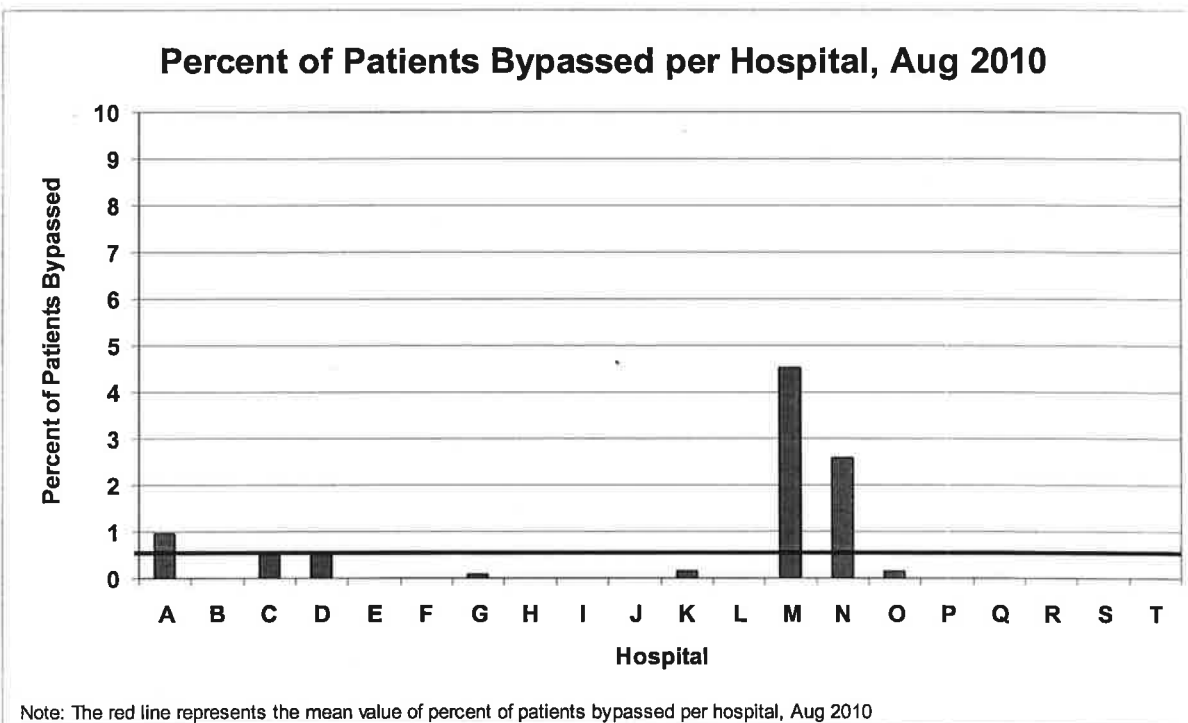
Source: County of San Diego, Health and Human Services Agency, Emergency Medical Services, MICN Records, Sept 2009 – Aug 2010 Note: Numbers based on Run Outcomes of Transport by Unit and Transport by Other



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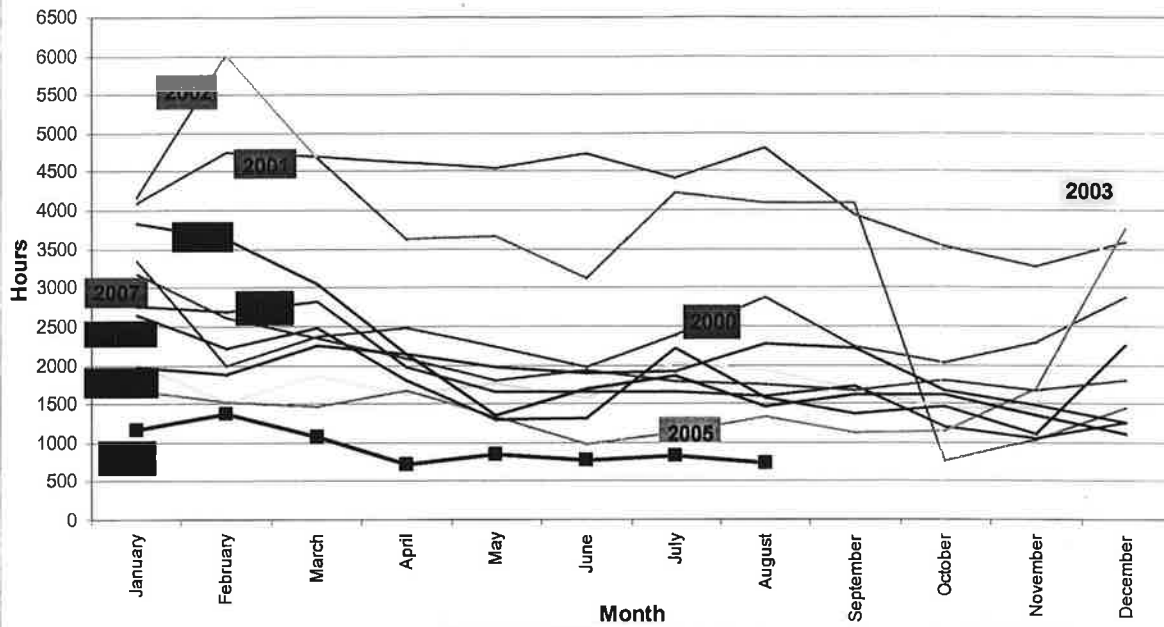


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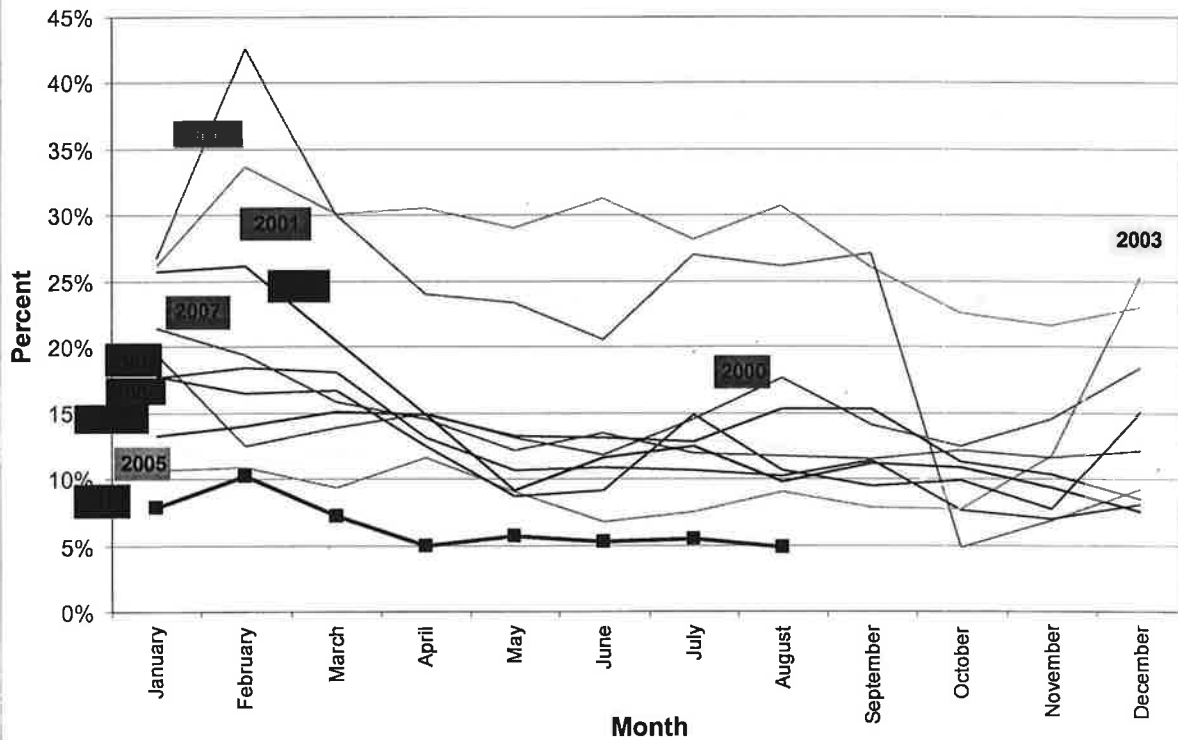
Source: County of San Diego, Health and Human Services Agency, Emergency Medical Services, MICN Records, Aug 2010
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Total Hours on ED Saturation by Month and Year, San Diego County, Jan 2000 - Aug 2010

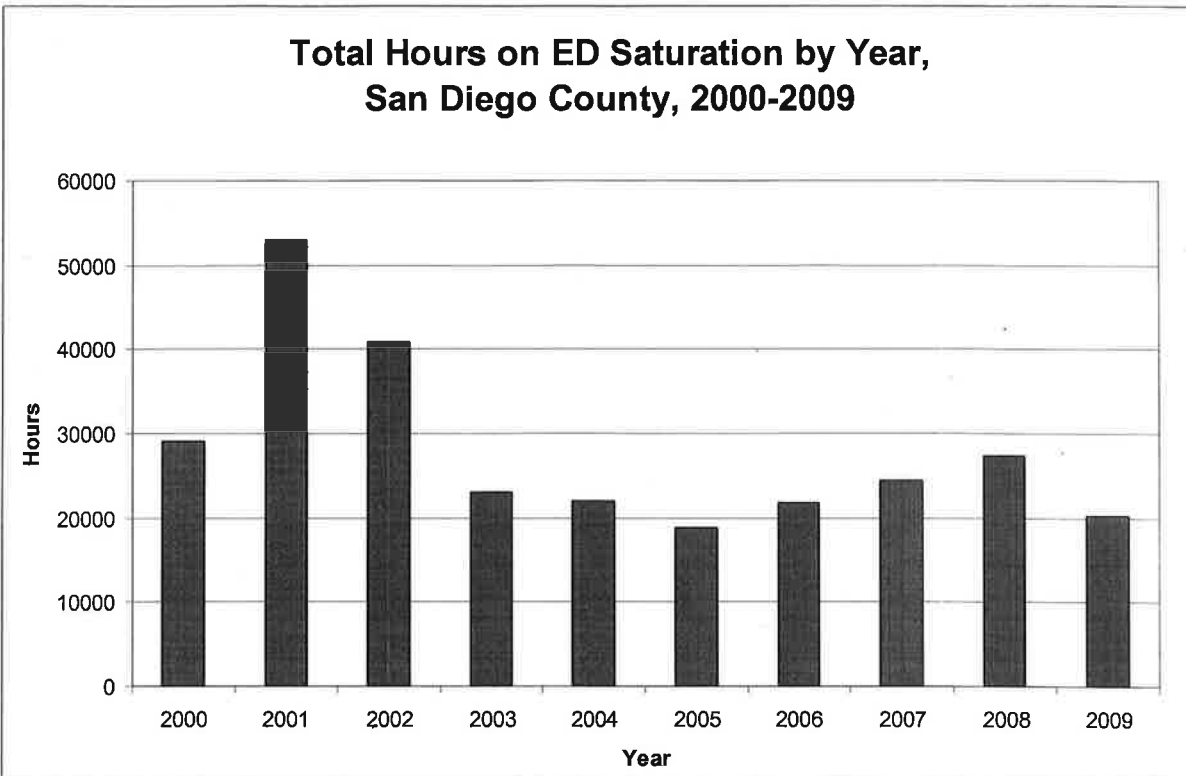


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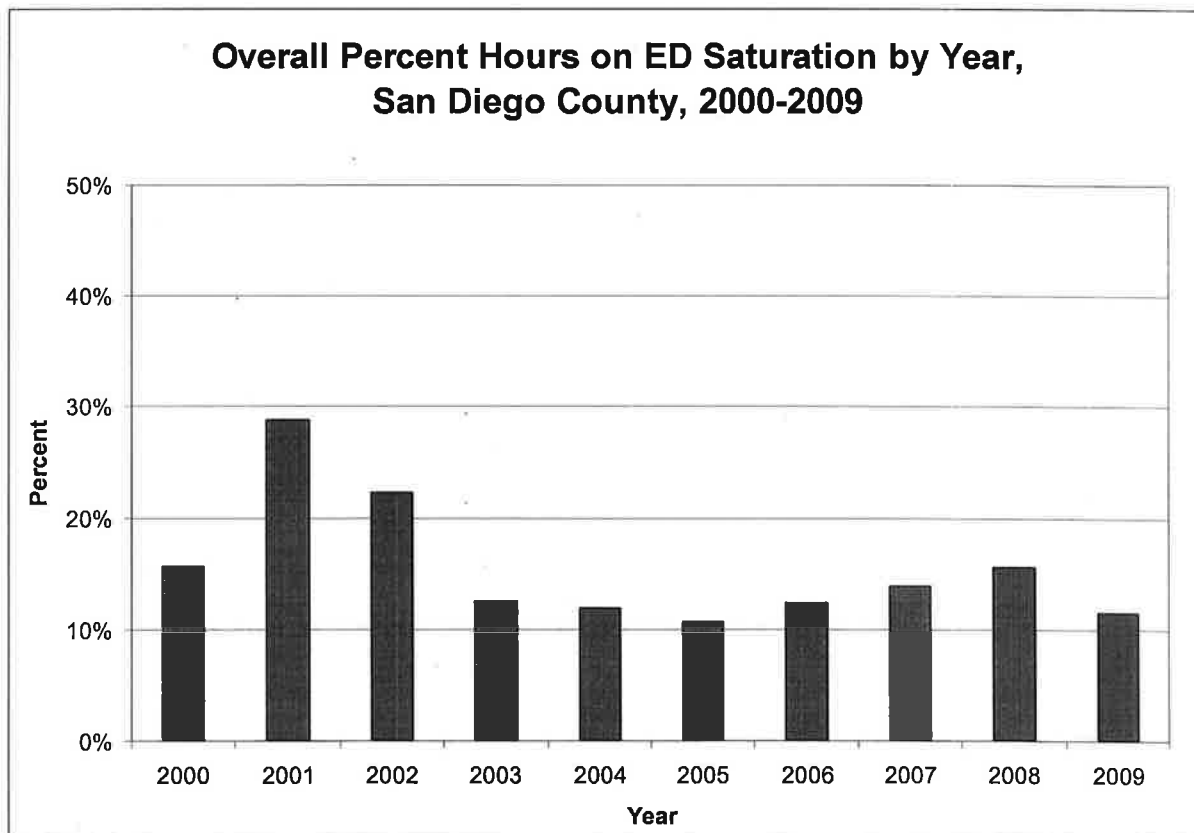
Overall Percent Hours on ED Sat Per Month San Diego County, Jan 2000 - Aug 2010



Source: County of San Diego, Health and Human Services Agency, Emergency Medical Services, MICN Records, Jan 2000 – Aug 2010



Source: County of San Diego, Health and Human Services Agency, Emergency Medical Services, MICN Records, 2000 – 2009



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PUBLIC HEALTH SERVICES

1700 PACIFIC HIGHWAY, SAN DIEGO, CALIFORNIA 92101-2417
(619) 531-5800 FAX (619) 515-6707

Bruce E. Haynes, M.D.
Medical Director
Division of Emergency Medical Services
6255 Mission Gorge Road
San Diego, CA 92120-3599
(619) 285-6429 FAX:(619) 285-6531

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Medical Director's Update for Base Station Physicians' Committee October 2010

Influenza vaccinations: Please get your influenza vaccinations for this year as soon as possible. The only exception should be if you have a bonafide contraindication. EMS personnel who are infected with influenza can shed virus before becoming ill, increasing the chance of transmission to an ill patient. Death rates of patients are lower in hospitals when healthcare providers are vaccinated against influenza. Likewise, the pertussis epidemic continues and you should receive the Tdap vaccine. San Diego County has had 681 confirmed cases of pertussis in 2010. The previous high for the county was 371 cases in 2005. Seventy five percent of cases are in those under the age of 18 years. The youngest children, under 6 months and before complete immunization, are most at risk and need to be protected by vaccinating those with whom they come in contact.

ACLS released: AHA released the new Emergency Cardiac Care (ACLS) guidelines yesterday (10/18/2010). We will be evaluating the new guidelines and considering changes where appropriate.

2011 Protocol Updates: This review will begin soon. If you have suggestions, let us know at EMS, or pass the information on through your base hospital or EMS coordinator.

ECCU2010: The Citizen CPR Foundation will host their emergency cardiovascular care conference December 7-11, 2010 in San Diego. The ECCU2010 conference focuses on the advanced life support/basic life support changes issued by the American Heart Association. Pre-conference workshops will occur on December 7 and 8, with the main conference Thursday December 9 through Saturday December 11. Lectures and classes will focus on the new ACLS changes with stimulating pro-con debates and review of the background on the changes. There will be official updates for AHA instructors. The Citizen CPR Foundation serves to stimulate citizen and community action in resuscitation. Registration information and the complete program are available at **ECCU2010.com**. There will also be a mass CPR instruction event on the Midway.

Dr. Tharratt resigns: Steve Tharratt the director of the state EMS Authority resigned to accept the position as medical director for the state prison system, working for the receiver responsible for prison medical care. He will be greatly missed in EMS, but we congratulate him on his new position and wish him success.

Nucynta is the trade name for a new oral narcotic pain medication. Nucynta (tapentadol) is intended for moderate to severe pain. It will be reversed with naloxone similar to other narcotics. It comes in 50, 75, and 100 mg tablets.

Stroke witnesses: Try to take to the hospital a witness or family member who can provide history about a patient who has just suffered a stroke. As you know, it is important to obtain an accurate time of onset for acute strokes so the best treatment can be provided.

Overcrowding Summit: The EMOC Hospital Overcrowding Summit was a great success again this year. Billy Mallon from USC reviewed the literature on causes and solutions for overcrowding, as well as the impediments to solutions. The new health care bill was reviewed by Steve Escaboza from the hospital association and Dr. Robert Hertzka, a former president of the California Medical Association. Three panels of ED medical directors and hospital administrators presented initiatives and programs implemented over the last year. This information was valuable, and will be shared among the hospitals. Congratulations to Roneet Lev, the Base Hospital Nurse Coordinators and the others who make this a success.

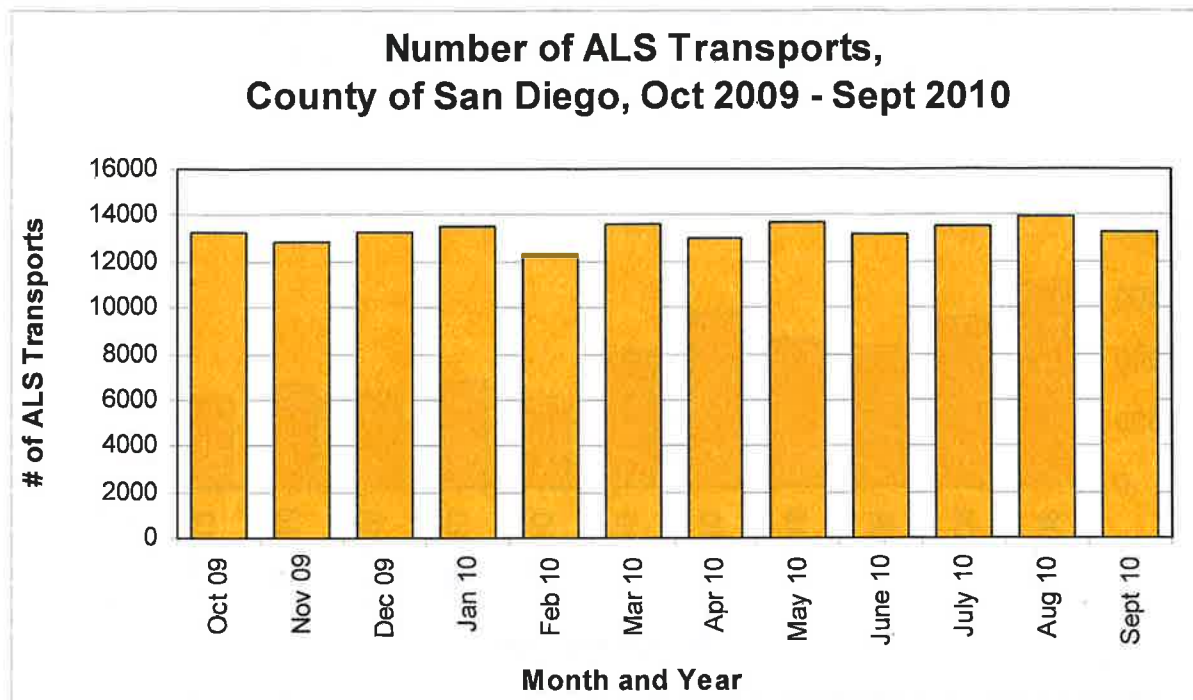
Congenital Adrenal Hyperplasia is a rare condition where the body fails to produce sufficient corticosteroid. Patients with this condition can die suddenly due to lack of steroids, often manifested by shock. Many are children who may have steroid preparations at home such as Solu-Cortef, hydrocortisone, or other agents. Parent frequently are instructed how to prepare and inject medications intramuscularly. The Solu-Cortef comes in an Act-o-Vial with medication and diluent separated in the same vial, where the top is pushed down to mix the two. EMS personnel might have to assist a family in preparation or with the injection. Other treatment includes intravenous fluids and dextrose for hypoglycemia. Be suspicious of hyperkalemia. Hypotension may not respond well to fluids or pressors until steroid is administered. Adrenal crisis may be precipitated by injury or illness, or rarely, by spontaneous hemorrhage in the adrenal gland. Children are screened for this condition at birth, so they should be known and usually have a medical alert identification.

Compression only CPR: was found superior to no CPR or traditional CPR with ventilations when used by lay bystanders/rescuers in patients with a cardiac cause for the arrest. The report was from Arizona and evaluated changes after compression only CPR was encouraged in the state. The rate of patient survival to hospital discharge was improved when compression only CPR was used in those with a cardiac cause of arrest. Neurologic outcome also was good in these patients. When the cause of the arrest was non cardiac, survival rates were similar.

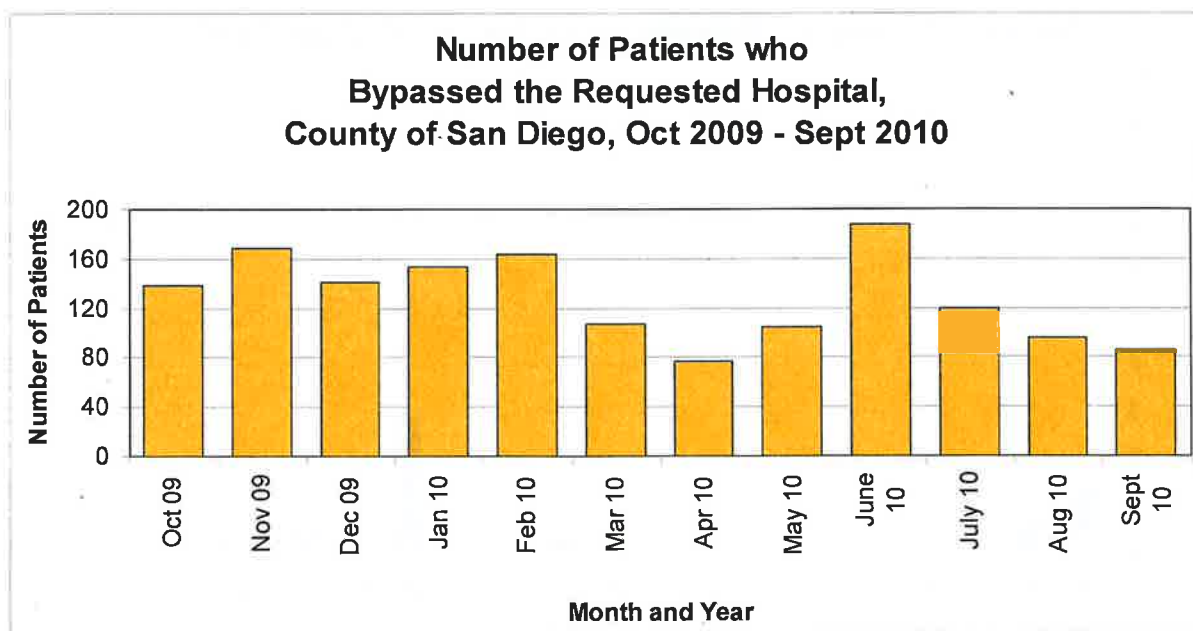
Drug Shortages: The projected morphine shortage in prefilled syringes has not really materialized. We will continue to monitor shortages and how to respond.

Ticagrelor (Brilinta): Remember ticagrelor is a new antiplatelet agent similar to Plavix that can complicate injuries. Treat it similar to Plavix and Coumadin.

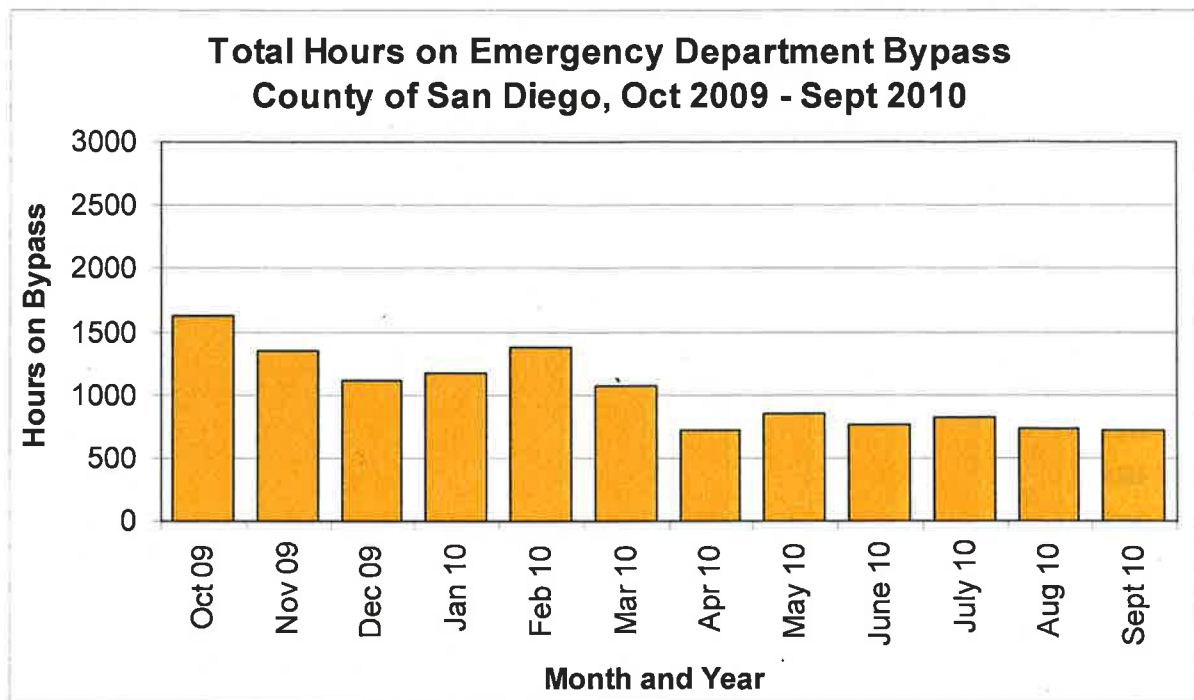
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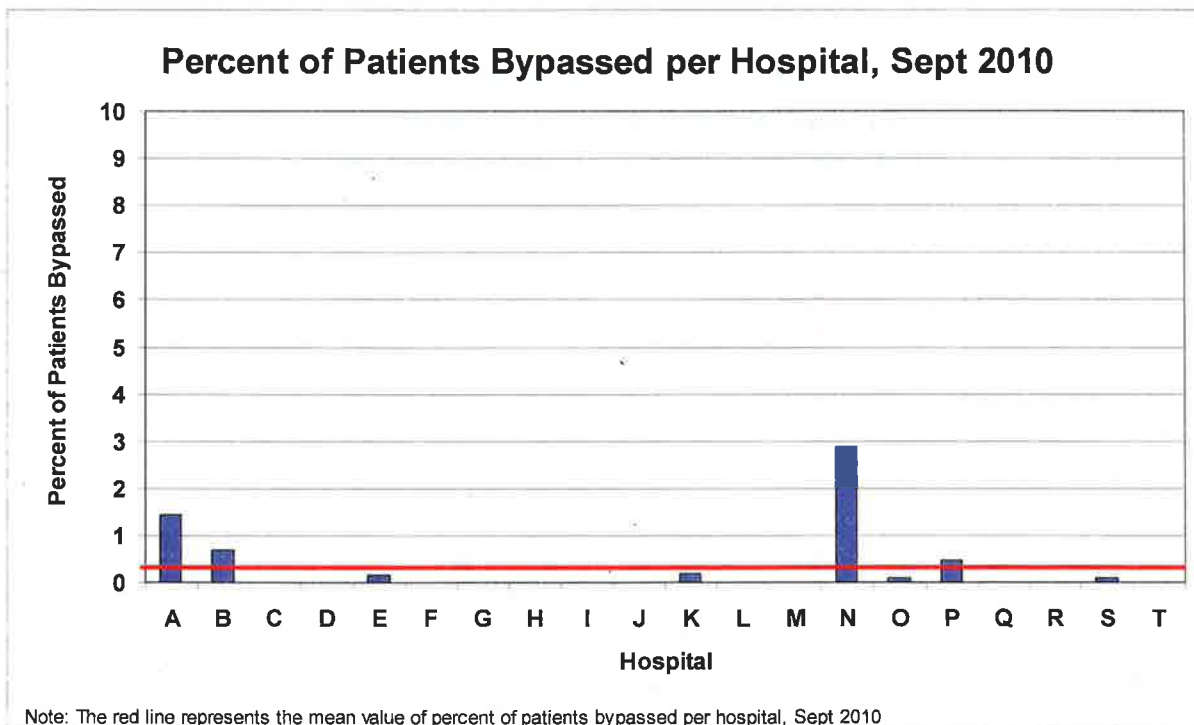
Source: County of San Diego, Health and Human Services Agency, Emergency Medical Services, MICN Records, Oct 2009 – Sept 2010 Note: Numbers based on Run Outcomes of Transport by Unit and Transport by Other



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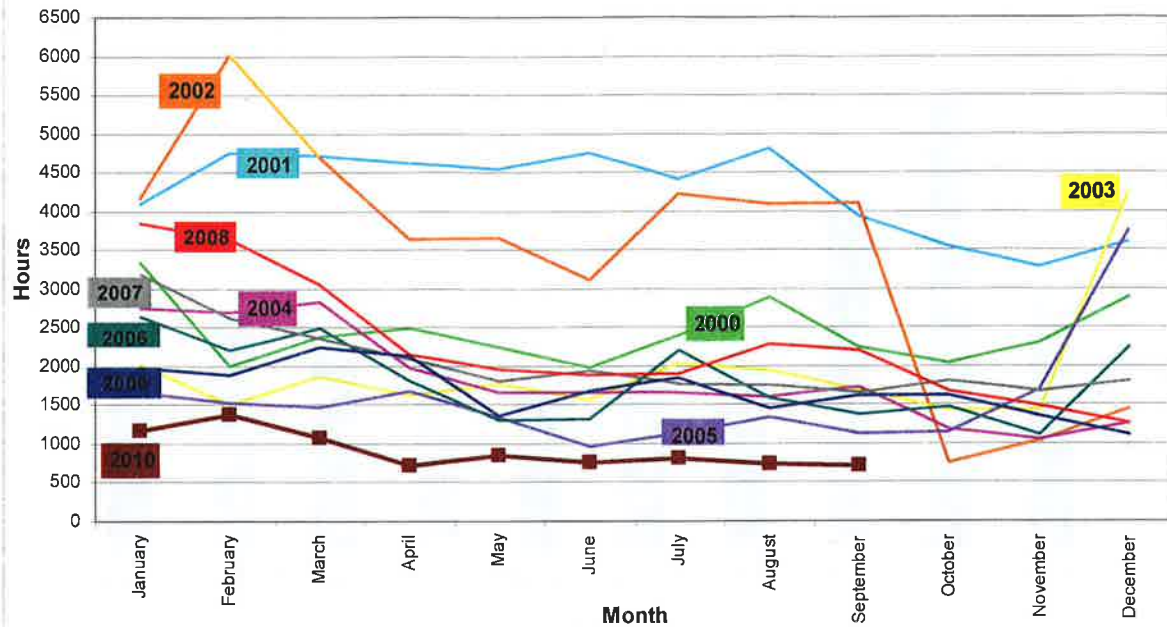


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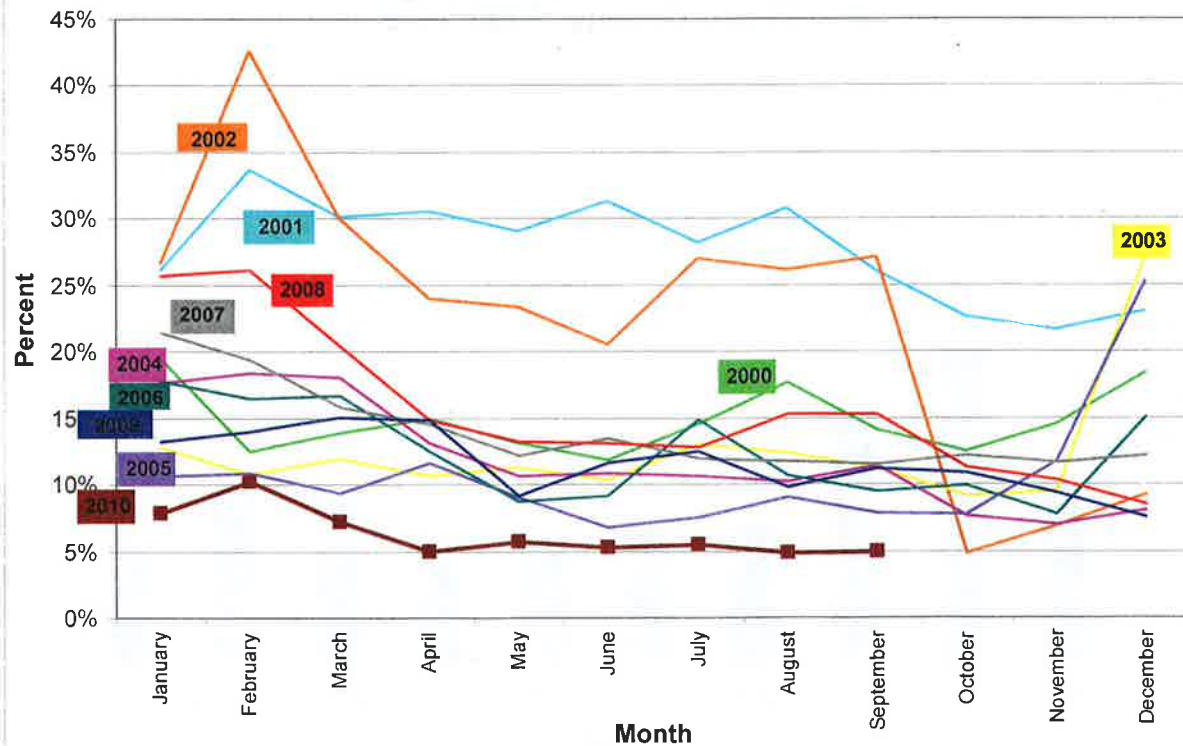
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**Total Hours on ED Saturation by Month and Year,
San Diego County, Jan 2000 - Sept 2010**

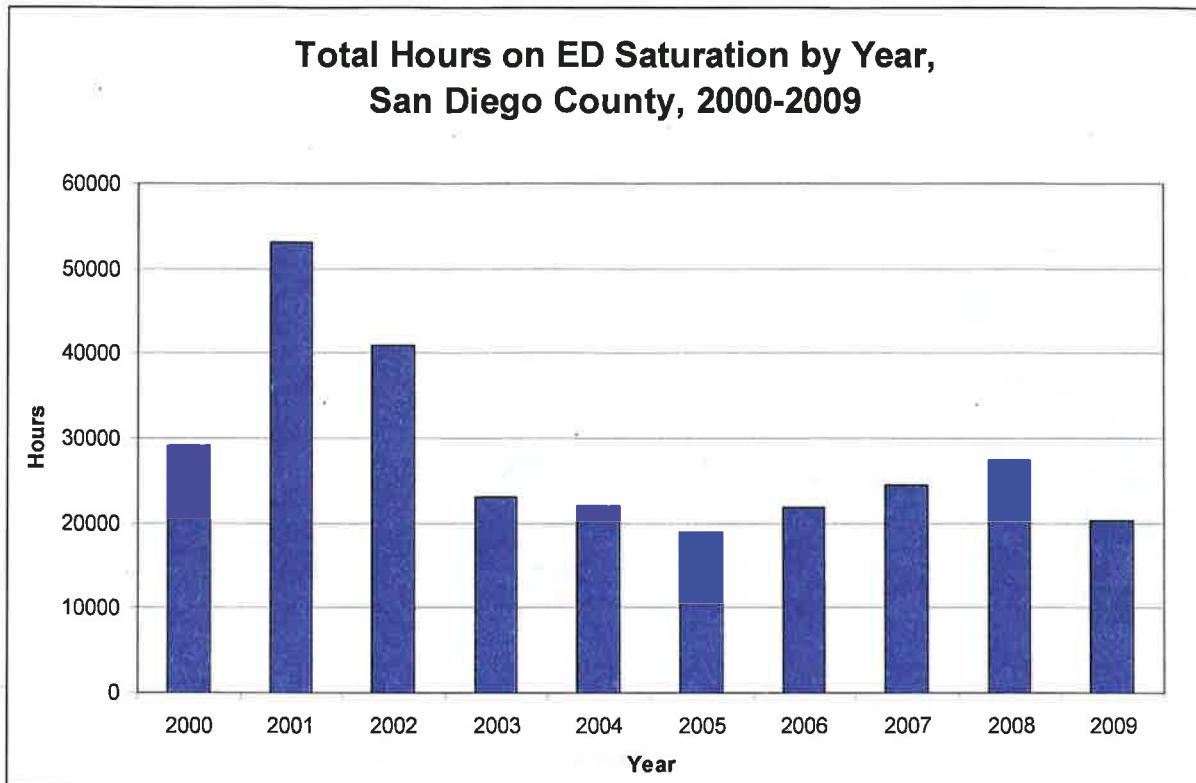


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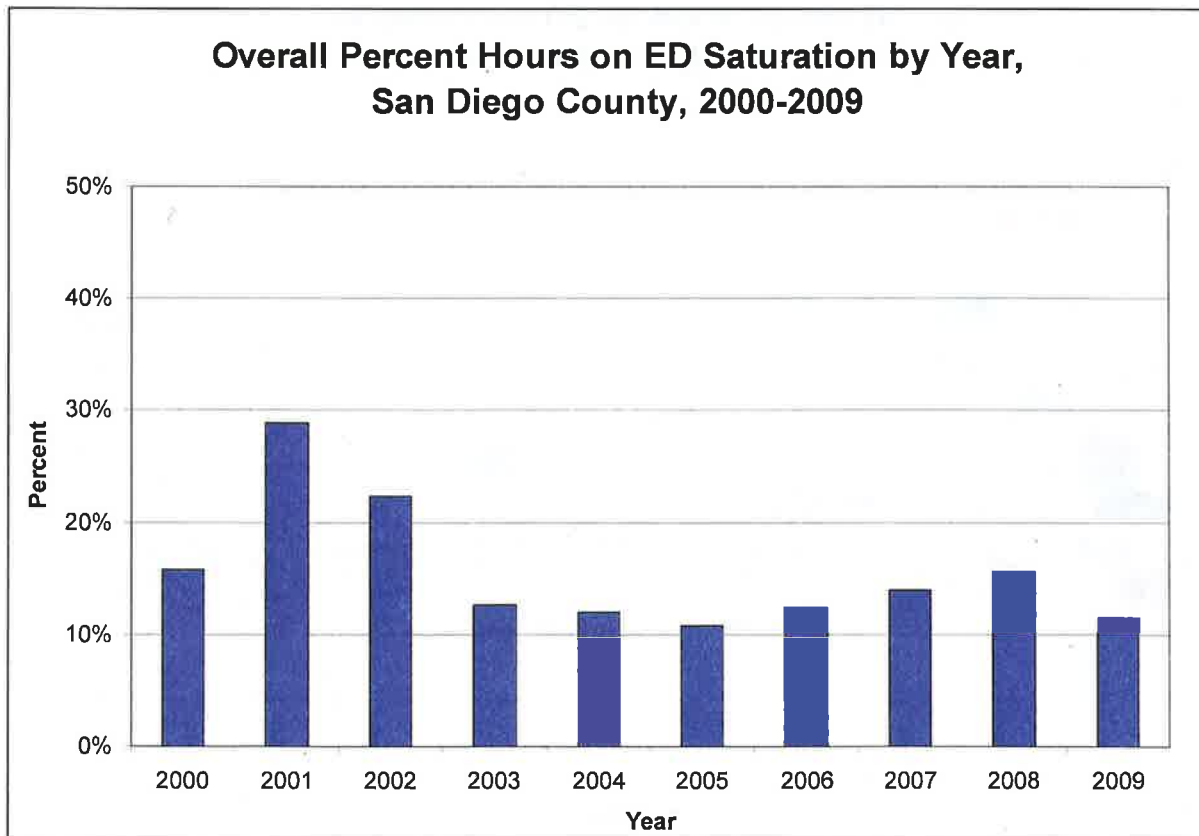
**Overall Percent Hours on ED Sat Per Month
San Diego County, Jan 2000 - Sept 2010**



Source: County of San Diego, Health and Human Services Agency, Emergency Medical Services, MICN Records, Jan 2000 – Sept 2010



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NICK MACCHIONE, FACHE
DIRECTOR

WILMA J. WOOTEN, M.D., M.P.H.
PUBLIC HEALTH OFFICER

County of San Diego

HEALTH AND HUMAN SERVICES AGENCY

PUBLIC HEALTH SERVICES

1700 PACIFIC HIGHWAY, SAN DIEGO, CALIFORNIA 92101-2417
(619) 531-5800 FAX (619) 515-6707

Bruce E. Haynes, M.D.
Medical Director
Division of Emergency Medical Services
6255 Mission Gorge Road
San Diego, CA 92120-3599
(619) 285-6429 FAX:(619) 285-6531

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Medical Director's Update for Base Station Physicians' Committee November, 2010

Citizen CPR Foundation: will host their emergency cardiovascular care conference December 7-11, 2010 in San Diego. Details at ECCU2010.com, and see below.

Influenza Guidance: The California Department of Public Health released a new Guidance document for influenza prevention in health care settings. The Guidance is similar to what we have used in EMS. For patients with suspected or confirmed influenza, a surgical mask is recommended when entering their room and being close to the patient. For aerosol generating procedures (eg, intubation, CPR, deep suctioning, nebulized treatments) a fit-tested N95 mask is recommended, along with gloves, gown, a faceshield that fully covers the front and side of the face (or goggles) as part of standard precautions. The Guidance recommends that masks not be reused.

CDPH cites the importance of influenza vaccine in preventing transmission and contributing to the new guidance. The San Diego County Medical Society GERM Commission recommends that hospitals move to mandatory influenza vaccination. This reflects the safety of the vaccine and that it prevents illness in health care workers and results in lower death rates among patients.

In addition to influenza vaccine, updating with a Tdap vaccine should be done as we continue in the middle of the pertussis epidemic.

ACLS released: The new AHA Emergency Cardiac Care (ACLS) guidelines are being reviewed and some changes will be made in the protocols as a result. The new guidelines mirror much of what we do now. The value of compression only CPR and starting the CPR sequence with compressions is included.

2011 Protocol Updates: The revision committee met twice, and will meet again soon to review the pediatric treatment guidelines. Suggestions for clarifications and simplifying some of the protocols were made. If you have suggestions, let us know at EMS, or pass the information on through your base hospital or EMS coordinator.

Capacity Plan: The capacity task force met and will make a few changes in the plan for this year's flu season. Please remember to review the plan before flu season. A letter to Jury Commissioner to excuse health care workers during the flu season will be sent again, but doesn't change the jury duty obligation. Anyone can ask for up to two postponements, and this would take the duty time out of the flu season. There is no permanent excuse for health care workers.

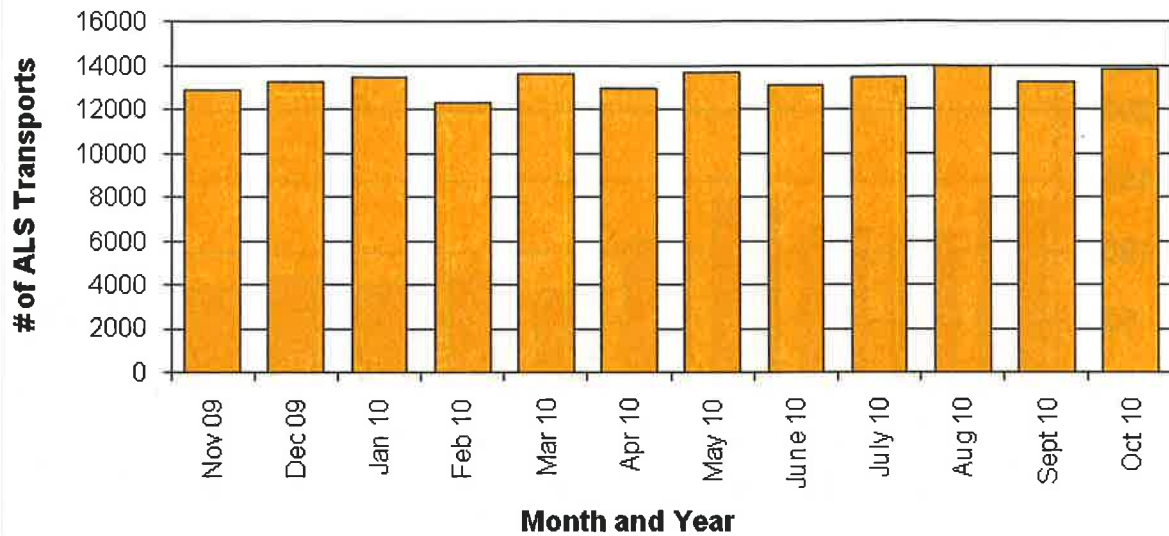
Stroke witnesses: Try to take to the hospital a witness or family member who can provide history about a patient who has just suffered a stroke. As you know, it is important to obtain an accurate time of onset for acute strokes so the best treatment can be provided.

Compression only CPR: I did not include the citation for this article in last month's report. The paper was published in JAMA issue of October 6, 2010.

Ticagrelor (Brilinta): Remember ticagrelor is a new antiplatelet agent similar to Plavix that can complicate injuries. Treat it similar to Plavix and Coumadin.

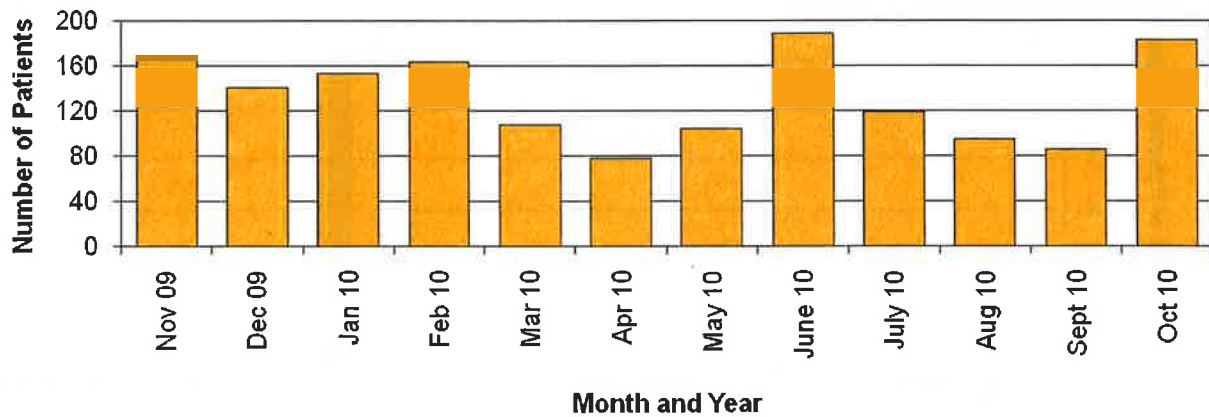
ECCU2010: The Citizen CPR Foundation will host their emergency cardiovascular care conference December 7-11, 2010 in San Diego. The ECCU2010 conference focuses on the advanced life support/basic life support changes issued by the American Heart Association. Pre-conference workshops will occur on December 7 and 8, with the main conference Thursday December 9 through Saturday December 11. Lectures and classes will focus on the new ACLS changes with stimulating pro-con debates and review of the background on the changes. There will be official updates for AHA instructors. The Citizen CPR Foundation serves to stimulate citizen and community action in resuscitation. Registration information and the complete program are available at **ECCU2010.com**. There will also be a mass CPR instruction event on the Midway.

Number of ALS Transports, County of San Diego, Nov 2009 - Oct 2010

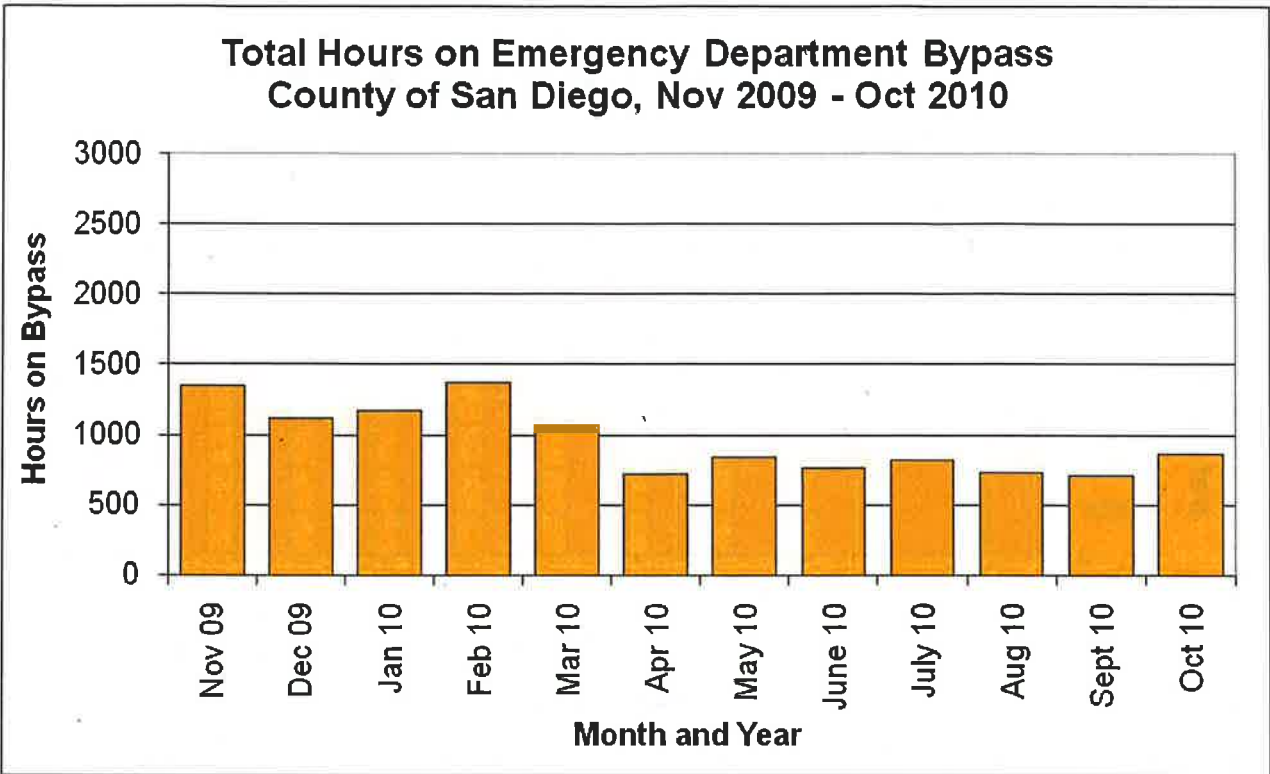


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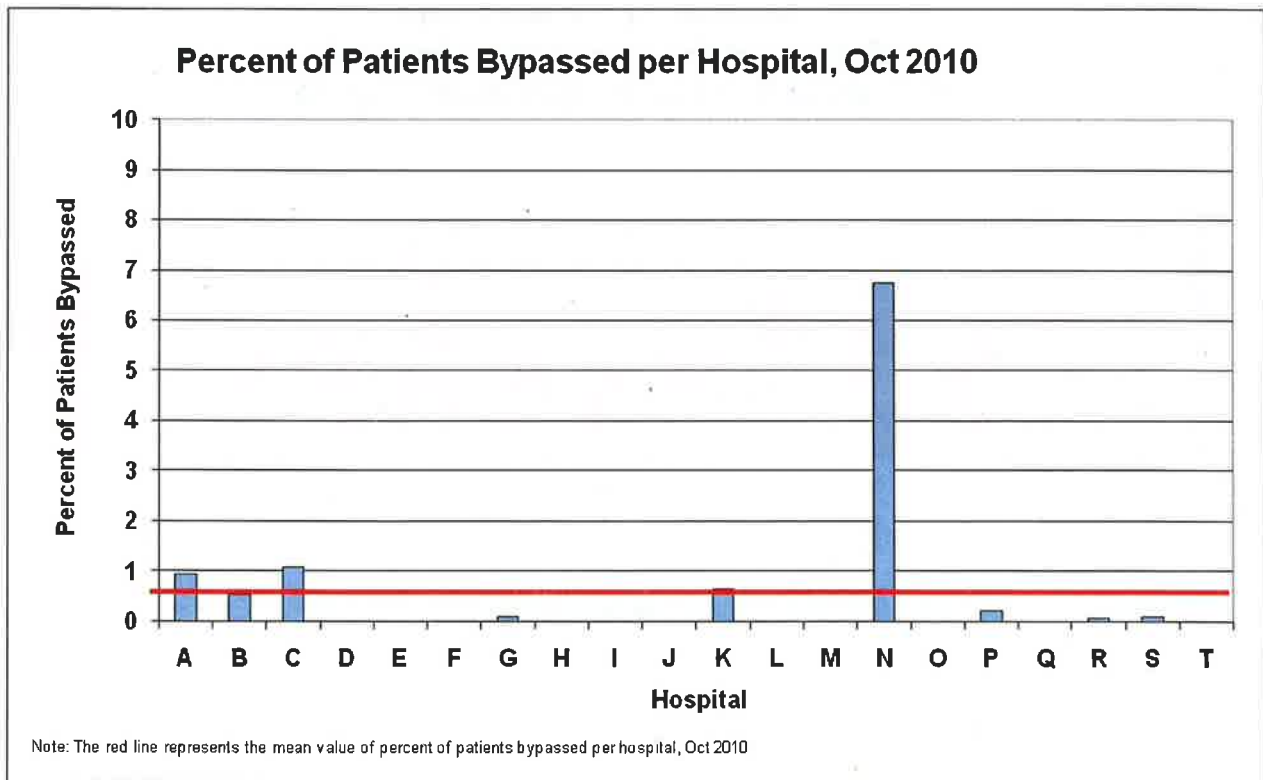
Number of Patients who Bypassed the Requested Hospital, County of San Diego, Nov 2009 - Oct 2010



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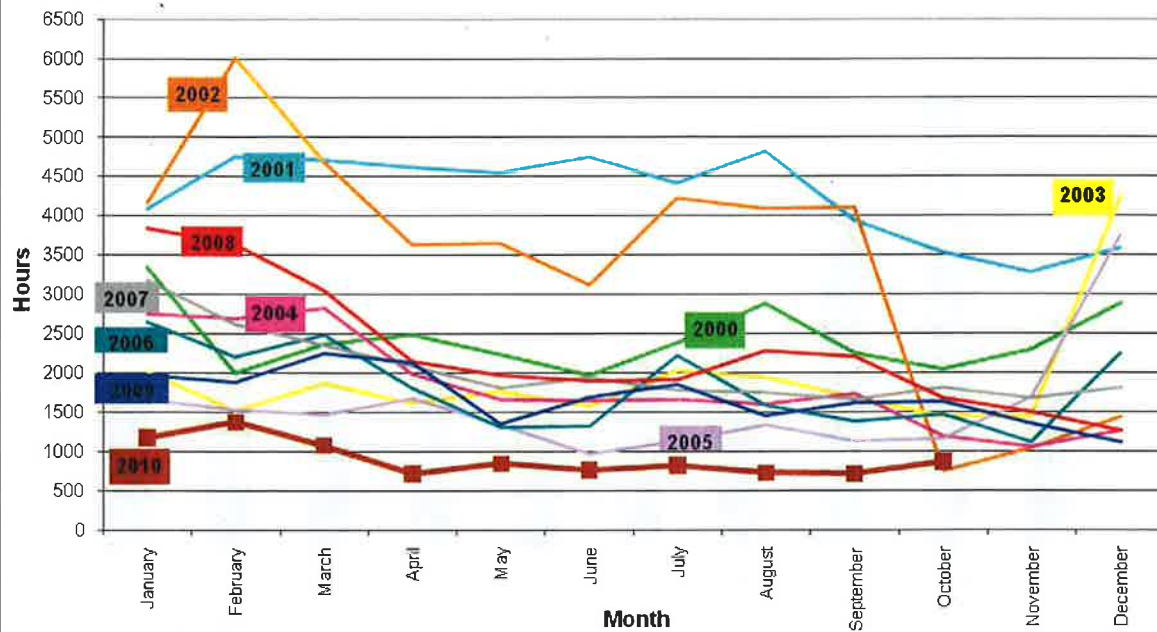
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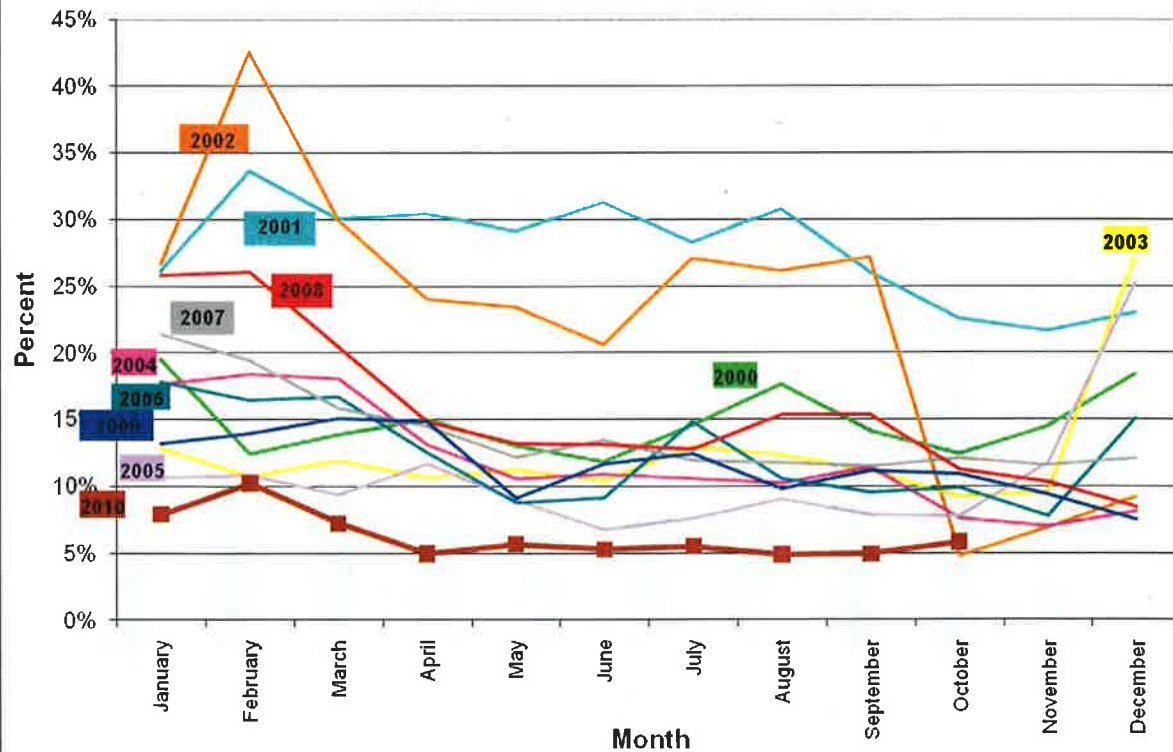
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**Total Hours on ED Saturation by Month and Year,
San Diego County, Jan 2000 - Oct 2010**

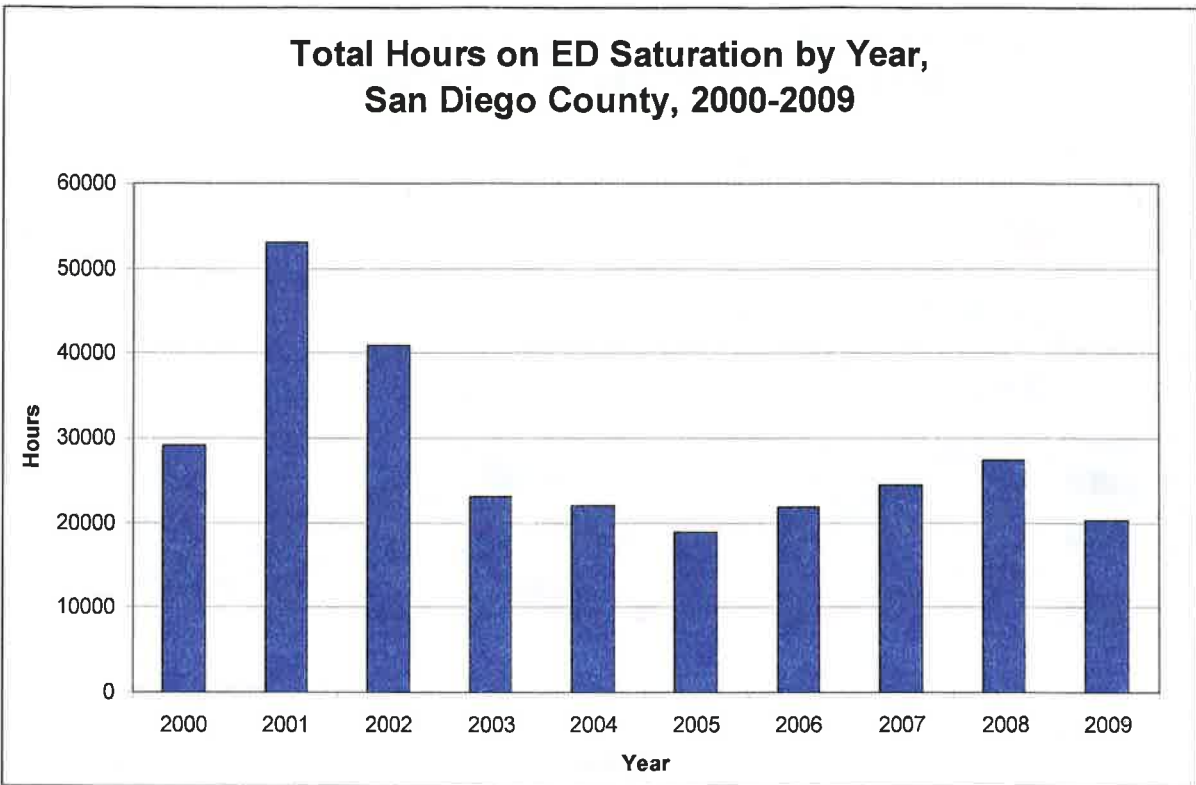


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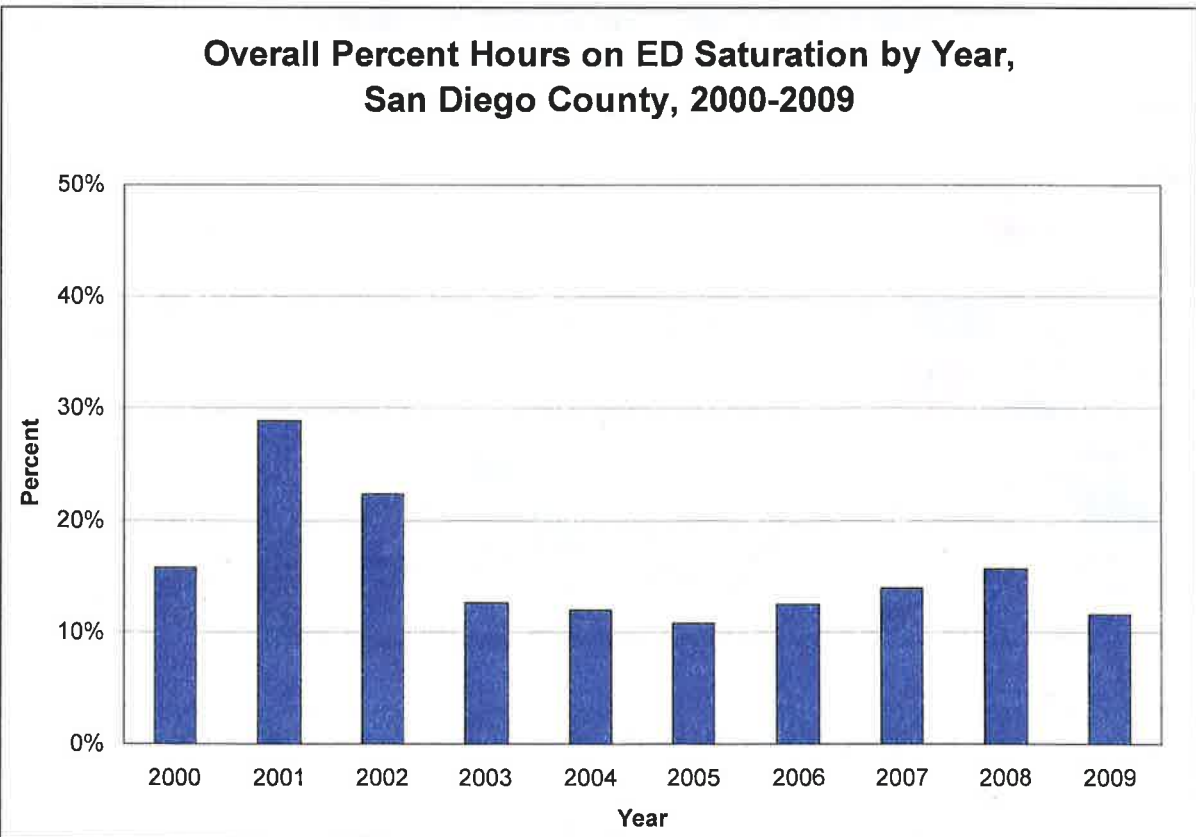
**Overall Percent Hours on ED Sat Per Month
San Diego County, Jan 2000 - Oct 2010**



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Medical Director's Update for Base Station Physicians' Committee December 2010

Merry Christmas, Happy Holidays, and a Happy New Year to all of you who make the EMS system work every day. Thanks for all your hard work this past year on behalf of the citizens of San Diego County. They appreciate your work, dedication, and professionalism.

There is no BSPC meeting this month, but we are sending out some infectious disease pointers.

Norovirus

There are norovirus outbreaks in the community, including some in long term care facilities. Be aware of this illness.

Recommendations for Control of Norovirus for First Responders (reprinted)

Noroviruses, formerly referred to as "Norwalk-like viruses," are part of a family of viruses called caliciviruses. Infection with a norovirus can cause acute gastroenteritis characterized by diarrhea, abdominal cramps, nausea and vomiting. Norovirus illness has an incubation period of 12 to 48 hours and a duration of 12 to 60 hours. Elderly and immunocompromised patients may be sick longer. Treatment of norovirus infection is supportive consisting of maintenance of hydration and rest.

Noroviruses are spread primarily through contact with an infected person's stool or emesis. Although "airborne" transmission has sometimes been described, this is really contact with particles of emesis that have been propelled long distances by someone with vigorous (often projectile) vomiting. Transmission occurs when the particles come into contact with mucous membranes and are swallowed, or when the skin is contaminated and virus is later transferred to a mucous membrane and

swallowed. Foodborne transmission is a common route of infection; direct or indirect person-to-person transmission is frequent. Indirect transmission is aided by the extreme hardiness of the virus in the environment as well as its highly infectious nature. The infectious dose is believed to be as low as 10 to 100 viral particles, while approximately one million particles are excreted per milliliter of stool. Shedding occurs in both symptomatic and asymptomatic persons. Shedding occurs while the person is ill and for up to two weeks post-recovery. There is also the possibility of pre-symptomatic shedding.

Noroviruses are very common: they account for 94% of nonbacterial gastroenteritis reported to the Centers for Disease Control and Prevention (CDC) for which a cause is identified. There are estimated to be 23 million cases each year in the United States, 9.2 million of which are believed to be foodborne.

Specific recommendations for management of norovirus for first responders include:

1. Contact precautions should be observed by the responder when there is potential contact with body fluids that are not one's own.
 - a. This would include long-sleeved gown, gloves, and a surgical mask in the presence of an actively vomiting patient or when cleaning a heavily soiled area.
 - b. If just walking into the facility to transport a patient with norovirus who is not vomiting, gown and gloves are sufficient.
 - c. The responder should refrain from touching their own mucous membranes unless hands have been washed first.
2. As waterless hand rubs are not completely effective against norovirus, hand washing with soap and running water when possible, or hand hygiene with a disposable towelette, is preferred. Handwashing should be performed before patient contact and eating, and after glove removal, use of the restroom, and at the end of the shift. Bare arm and any other skin that might have been exposed during vomiting should also be washed.
3. If the primary care provider has been within range of the vomiting patient, the responder's outer clothing should be changed or covered with a disposable jumpsuit prior to further patient or environmental contact when possible.
4. If a patient has diarrhea, or especially if they have projectile emesis while in custody of the first responder, the following sanitation must be done BEFORE use of the exposed equipment for another call:
 - a. Wearing gown, gloves and a surgical mask, scrupulously clean up all emesis and stool.
 - b. Following manufacturer's instructions for contact time, disinfect the entire area *within an 8-10 foot range of the vomiting incident* with either a double-strength phenolic, 1:10 dilution of fresh bleach, or a quaternary ammonium product that has an Environmental Protection Agency (EPA) norovirus kill claim.
 - c. If disposable supplies (e.g. dressings) have been 'exposed' and cannot be disinfected, they should be thrown away. Non-disposable equipment such as gurney straps, BP cuffs, etc. should be cleaned and disinfected.

- d. Failure to be meticulous with cleanup may lead to norovirus remaining in the environment and subsequent employee or patient infections.
5. Report the incident to the receiving facility.
6. First responders who become ill should not come back to work until symptom-free for 24 hours, must practice scrupulous handwashing, and if possible, should not perform food handling duties until able to return to work.

Additional information is available on the County of San Diego Department of Environmental Health website: "Norovirus Infection Prevention and Control at:

http://www.sdcounty.ca.gov/deh/food/pdf/publications_norovirus.pdf

Wound Botulism

Three additional cases of wound botulism have been diagnosed in the county since September. These are in North county and related to the use of black-tar heroin, especially, it is believed, skin popping.

Clinical presentations include diplopia, wound infections, and a recent history of skin popping black-tar heroin. Other symptoms include bilateral ptosis, bilateral eye palsies with weakness of movement, and most importantly, generalized weakness. These patients may become profoundly weak and require mechanical ventilation.

Treating clinicians who think the patient requires botulism antitoxin should call the County of San Diego Epidemiology program at 619-515-6620 (or after hours 858-565-5255) to arrange for release of antitoxin.

General information at the CDC website:

<http://emergency.cdc.gov/agent/botulism/clinicians/index.asp>

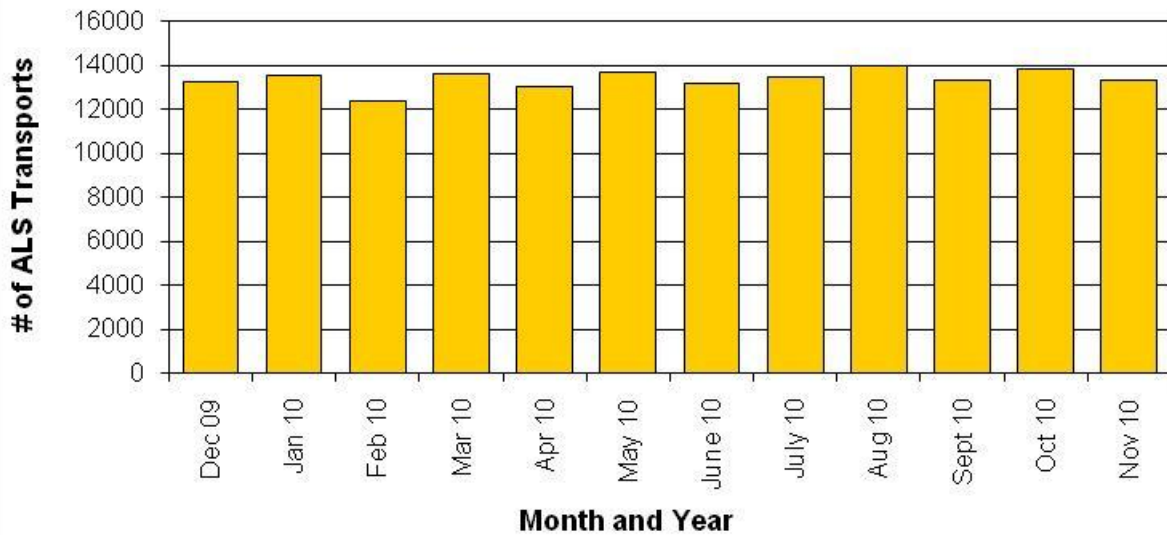
Influenza

There is an increase in influenza reported in the community, although the levels are still low. Several cases have, however, been serious requiring hospitalization and mechanical ventilation. It is important for field personnel to be vaccinated with influenza vaccine. This protects the healthcare worker and their family. Importantly, patient death rates are lower when health care personnel are vaccinated. The vaccine is safe and effective. It is important that pregnant women receive the vaccine. They are more likely to become seriously ill.

Pertussis

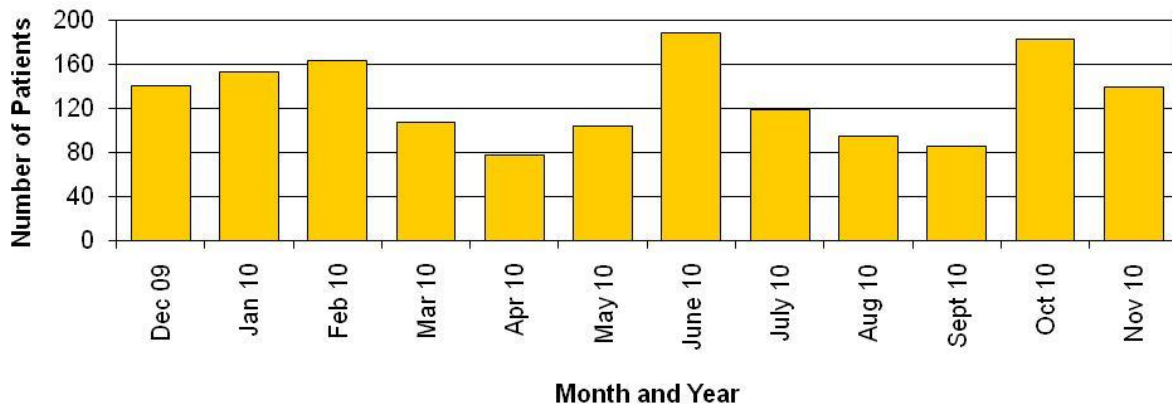
The epidemic continues in the community. Tdap vaccine is available and important for healthcare workers.

Number of ALS Transports, County of San Diego, Dec 2009 - Nov 2010

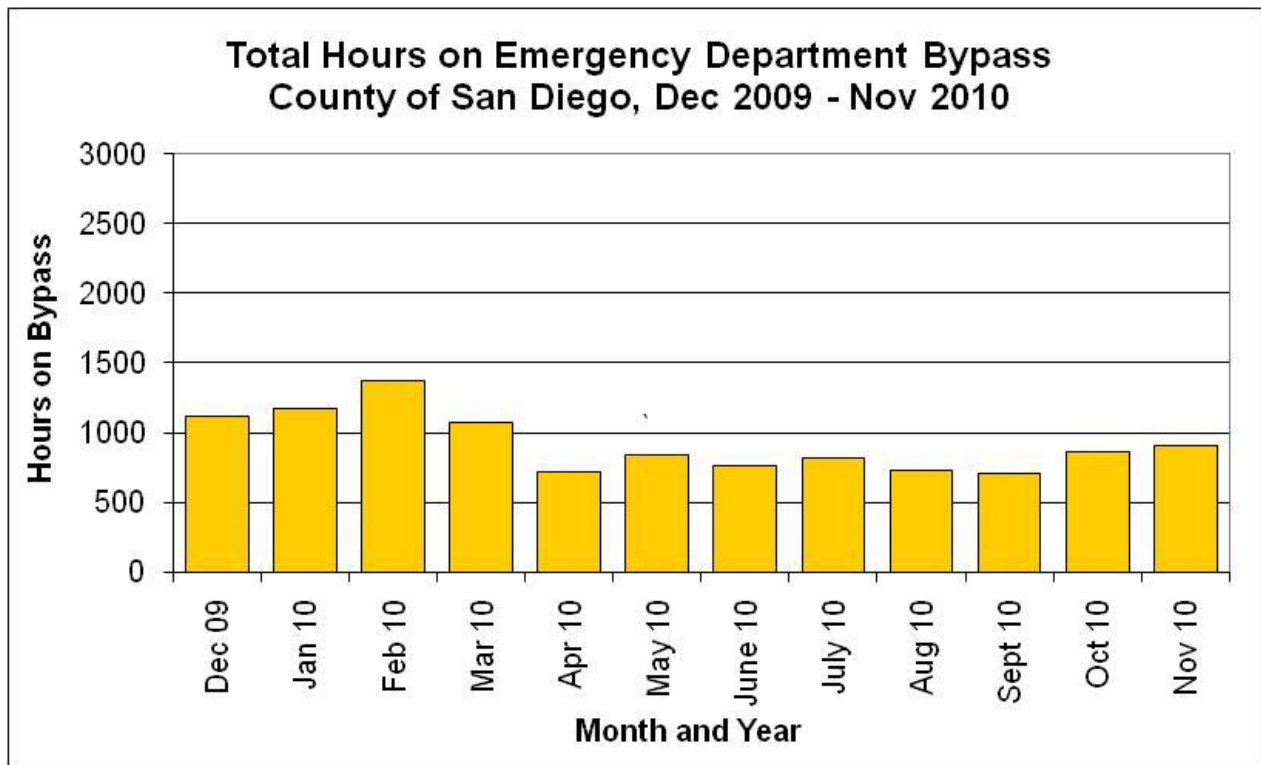


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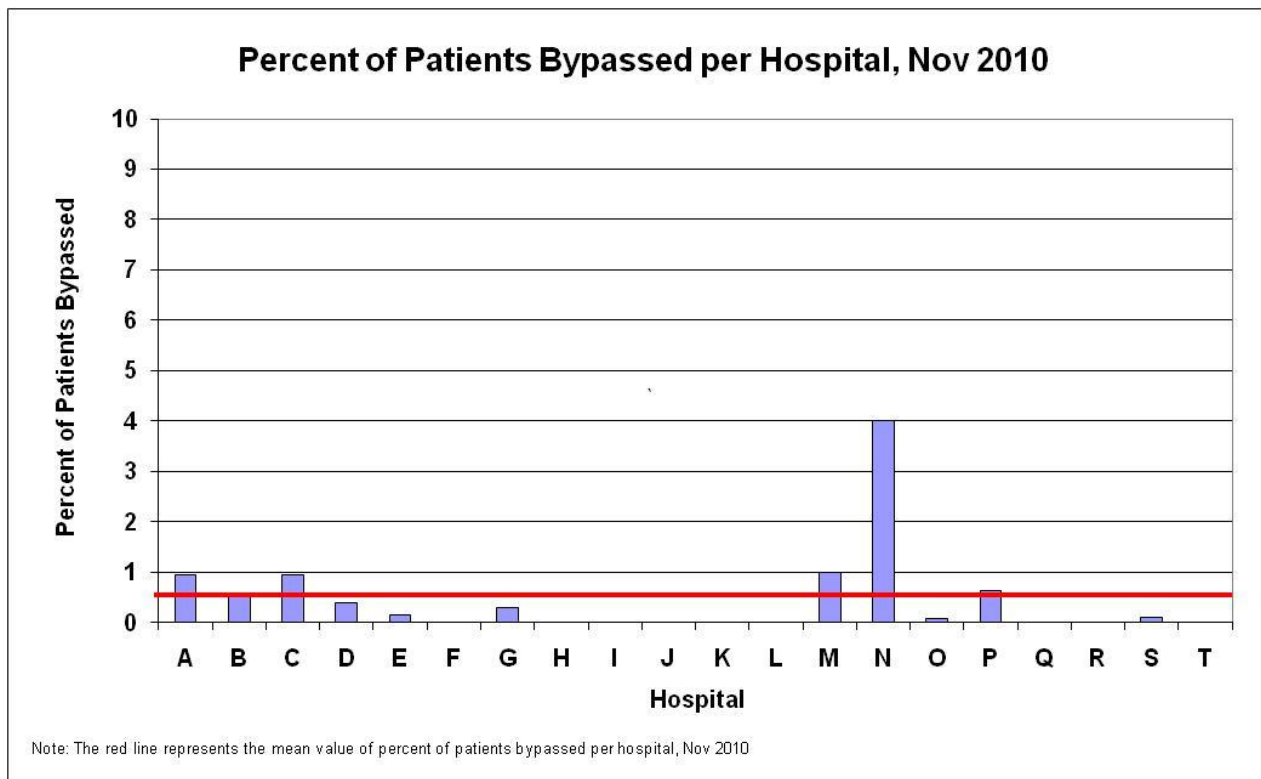
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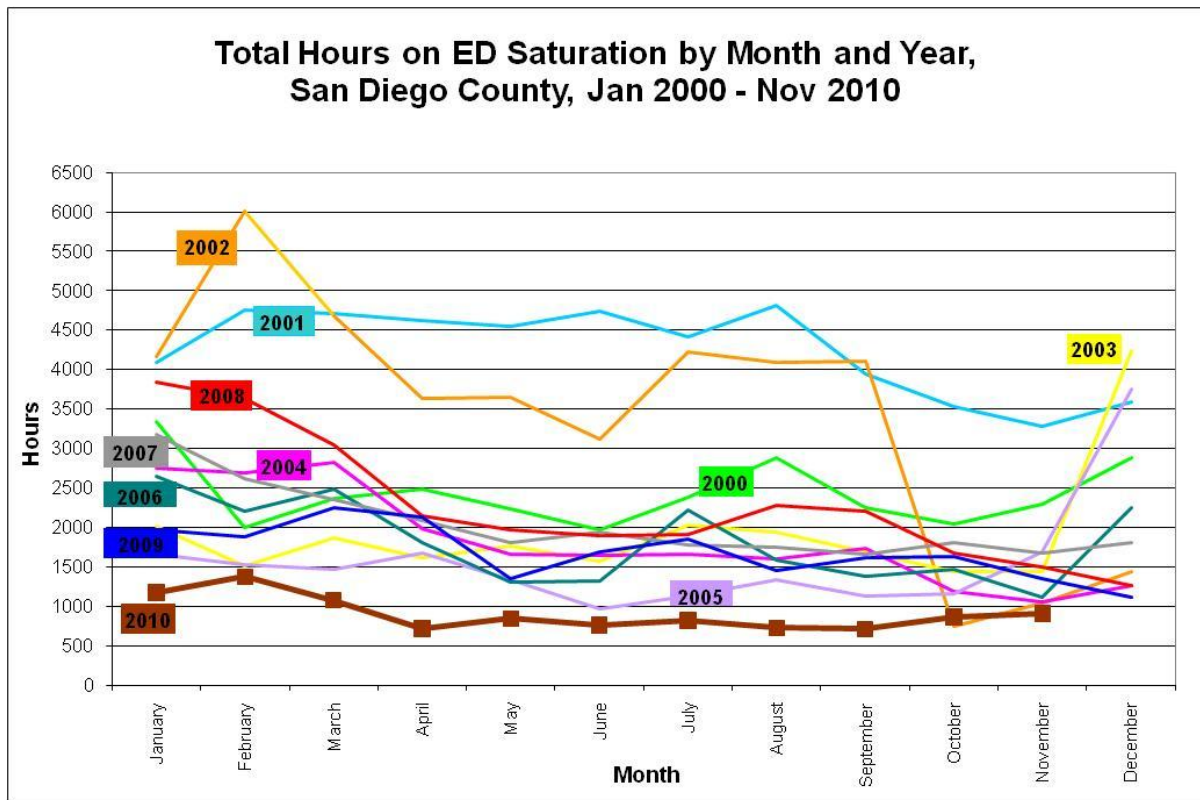


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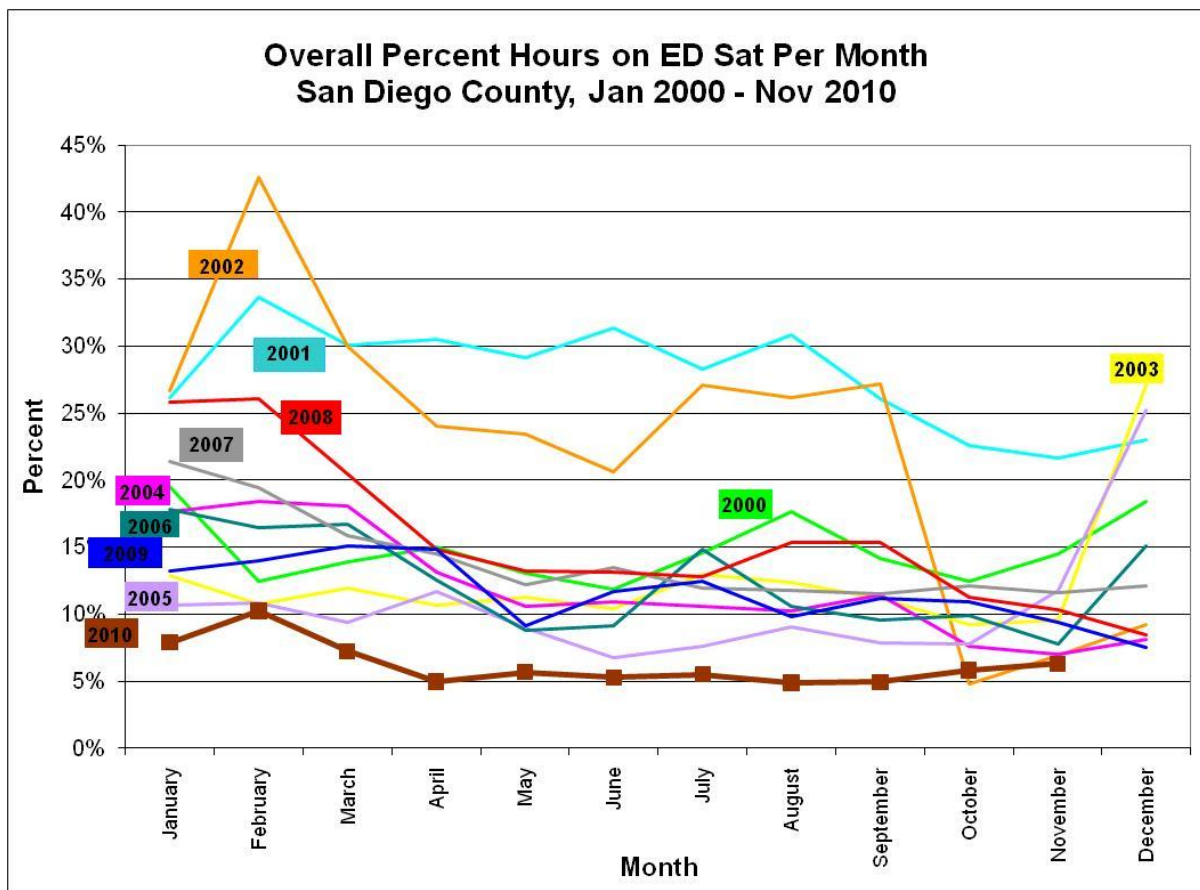


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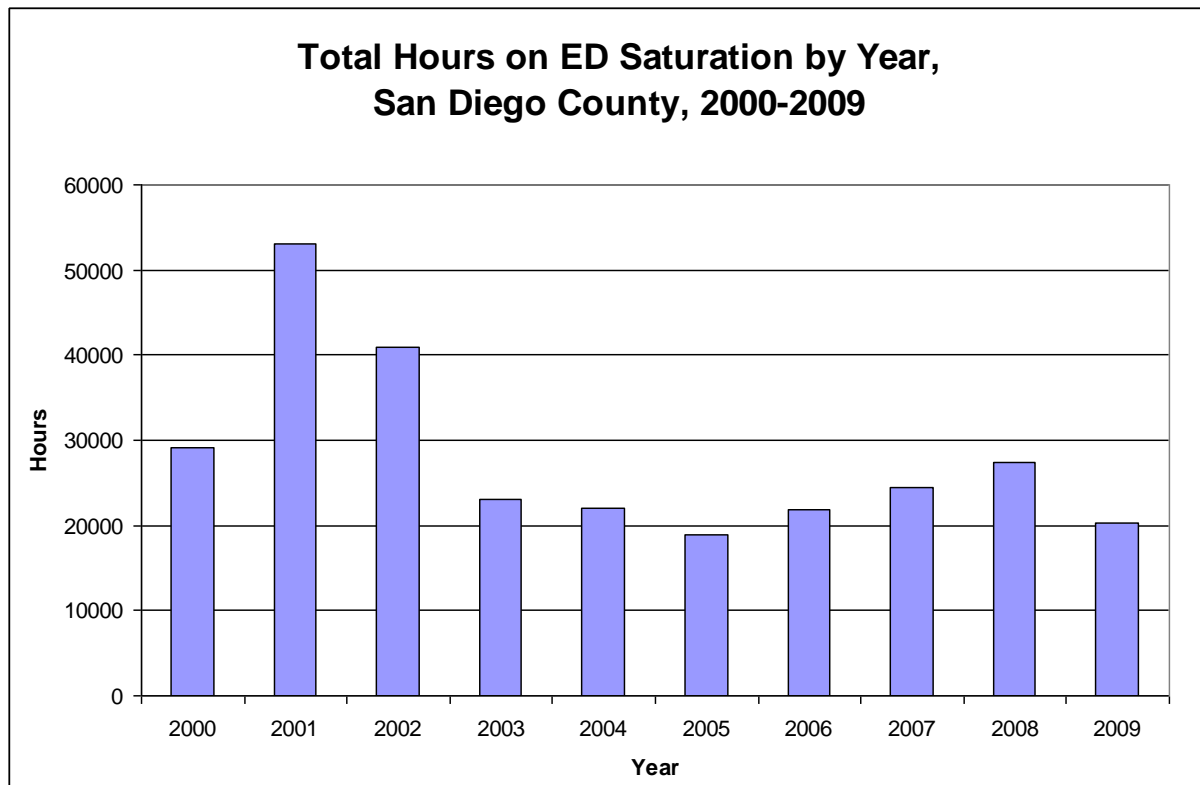
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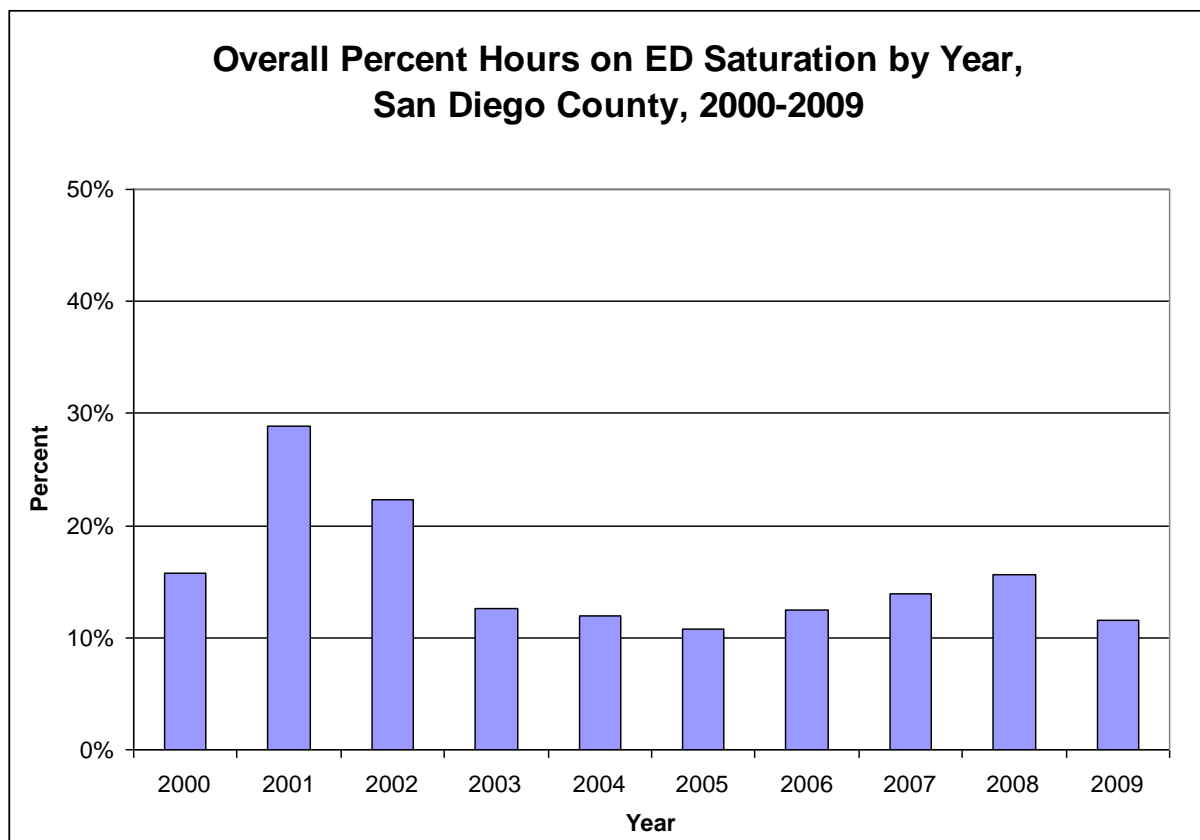
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